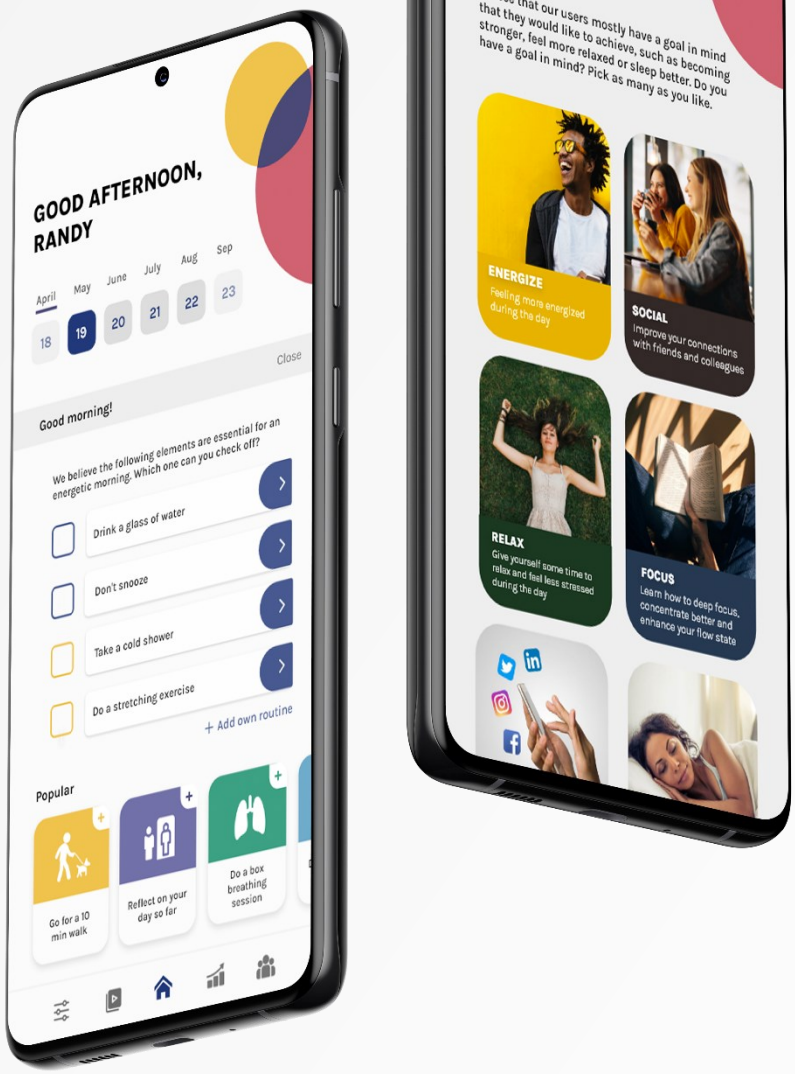
MASTER THESIS

Design engagement for the Recharge app to help and motivate users throughout the program



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Preface

This report shows the process and results of my graduation project for the master Design for Interaction at the Delft University of Technology. The purpose of this project was to investigate how to create more engagement with the Recharge app and how design can motivate users to go through with the Recharge program.

Recharge is a company that wants to improve people's lives who have a typical nine to five job and don't give enough attention to their health. Due to the Covid-19 pandemic and the increase in remote working, people experience difficulty in finding structure in their lives and health issues become more problematic than before the pandemic. Recharge wants to guide these people by sharing their vision and motivating them to improve their health by providing an online program.

The company goals aligns well with my ambition. During my masters and bachelor at the TU Faculty of Design Engineering, I did several projects in the field of exercise and health. Furthermore, interactions between digital products and people with the goal to have a positive impact on people's overall happiness is something that I like to work on and is something I want to focus on in the future. Therefore, working for Recharge was the perfect opportunity for this graduation project.

I would like to thank my supervisory team. Timothy, thank you for your guidance, insightful perspectives and enthusiasm throughout the project. The mentor meetings really helped me to find structure during my project. Derek, thank you for sharing your knowledge on the topics, encouragement and challenging me every meeting to take it one step further. I would also like to do a special thanks to Willem van der Maden who helped me out at the start of my thesis and provided me with helpful insights and guidance during the project.

On top of that, I would like to thank Randy for mentoring me about the company. Thank you for your availability, positive energy and guidance. It really helped me a lot that you could arrange interviews with the target audience. Furthermore, your open-mindedness and flexibility during the brainstorming session in this graduation project were valuable as well. Finally, I want to thank my family and friends for all their support during the project.

It was a pleasure to work with all of you and I hope you will enjoy reading the thesis. If any questions come to mind when reading the thesis or if you want to know more about the topic feel free to reach out.

Executive Summary

Due to an increase in remote working concerns around mental and physical health are increasing. Most people are aware of this problem, but find it hard to improve their health. Recharge is a company that wants to help these people by providing an app where users experience an one-week Bootcamp. In this week they are challenged to try out new healthy exercises to break old habits and kickstart new ones.

However, Recharge had the problem that users lost interest after interacting with the app. This sparked the opportunity for this project. To explore what caused users to lose motivation and how design can play a role to engage and motivate users to finish the Recharge week.

The project started with a literature research on Recharge and the integration of design on the topics motivation and engagement. As a result, a journey roadmap and a user scenario was developed to get an overview of the company and the service they provide. Furthermore, a framework was developed on what features can boost motivation in design, and engagement guidelines were formulated. It appeared that the app was lacking in providing community feelings, creating personalization and customization features and providing enough feedback.

To confirm these results, in-depth interviews were conducted with current Recharge users. The interviews confirmed the previous insights and showed the value of adding guidance throughout the app, smaller tasks and prioritizing and reflecting on health more regularly. With these final insights, a design direction and vision were formulated.

In the developing stage brainstorming, experimentation and user tests were performed to iteratively develop the final concept. The concept consists of a new onboarding experience where users experience more choice freedom in picking their goals and obstacles. Furthermore, well-being questionnaires were formulated to measure the success of the week and guides users to see what they want to achieve.

A new checkbox system was developed where users could customize their tasks, participate in smaller tasks and personal recommendations were displayed based on the onboarding data. At last, reflection activities were added where users could select statements to make it easier to reflect on their day and a final survey of the week was added.

During the last user test more feedback and reflection activities were added to the concept, for example adding a final summary at the end of the onboarding, day and week. In the daily overview users could reflect on the tasks by ranking them in a top 3 category. Furthermore, after every small task and at the end of the day/week users could check their progress.

Although the last recommendations were applied, there was still room for improvement. To push Recharge in the right direction a strategic roadmap was created for the coming 2 years. This roadmap consists of the future user focus, future features, feasibility and the METUX spheres. At last, an evaluation of the project was conducted with it's main takeaways and limitations. Finally, the project ends with a personal reflection on my ambition and learning curve.

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01

INTRODUCTION

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1. Context
2. Project problem
3. Project goal
4. Approach and methodology

1. PROJECT INTRODUCTION

1.1 Context

For this project, the Recharge program was redesigned. The Recharge Company is a company that guides users to break ingrained habits with effective routines that help them to achieve their personal goals. To do this, the company provides their users with a program. This program consists of a Recharge app, several online and offline workshops, digital coaching and providing weekly challenges.

The current experience Recharge provides is a five-day Bootcamp program. In these five days users are challenged to try out new healthy exercises during the day to break old habits and kickstart new ones. One example is to take a cold shower in the morning to start the day energized. The five-day Bootcamp is organized three times a year which can be visualized in three pulses (see figure 1).

The main topics are about exercise, mindset, focus, relaxation and nutrition. To break their habits users get access to accompanying recipes, videos, personal coaching, workshops and a daily to-do list supported by scientific background information.

The company focuses on a business-to-business model. Therefore, the program is only available for employees of companies that are customers of The Recharge Company. Therefore, a license for the program can't be bought individually.

It is encouraged to plan a Recharge Bootcamp period with all employees of the company. In this way, users can work together, motivate each other and make teams. However, it is also possible to plan a Bootcamp individually

The main stakeholders:

- The Recharge Company (company). They want customers to experience how a healthy lifestyle and good habits can have a huge positive impact on life.
- Companies (customers). They benefit that their employees stay fit and healthy. In this way they are more energized at work.
- Employees (users). They break their bad habits and will achieve their own personal goals (less stress, better sleep or being more fit). They work more efficiently and therefore have more qualitative time to spend during their day.

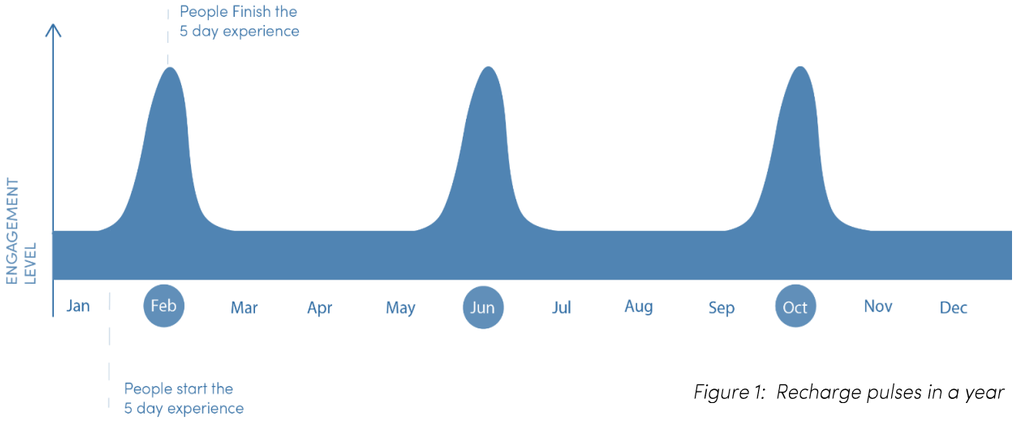
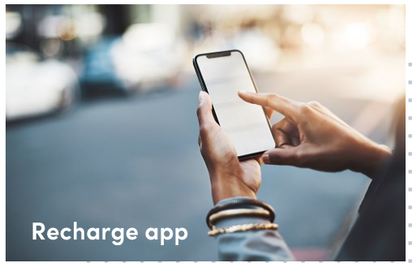


Figure 1: Recharge pulses in a year



1.2 Problem definition

Currently, the app is quite basic. Users lose interest after the first time of interacting with the app. On the first day of using the app there is already a drop-off of around 80% and for the next 4 days it drops around 7% (See figure 2). Although users still want to achieve their goals, people are simply not motivated enough to start and go through with the program. This gives the opportunity to do in-depth research on the program and the app to see why people are demotivated after subscribing to the program and to come up with several design solutions.

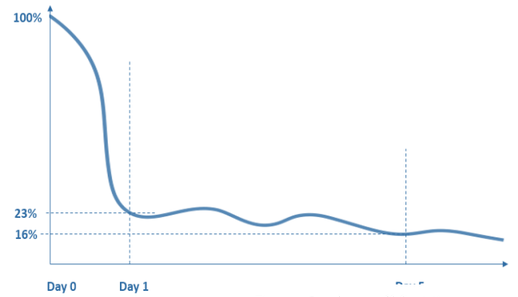


Figure 2: drop off first time users

1.3 Project goal

For the Recharge company, a new experience with the program was created to get users engaged and motivated throughout the program. Where the research question is:

"How to enhance motivation among Recharge users for them to go through with the program and create feelings of engagement with the app?"

1.4 Approach & Methodology

This project was divided into four different phases which were based on the double diamond design process model. For each phase different methods were used which can be found in figure 3.

Discover

For the discover phase desk research was conducted. Research on how the Recharge company operates and how customers are recruited were presented through a journey map. Furthermore, literature research was conducted on motivation, well-being and engagement. It was important to understand how these three topics related to one another and how they were implemented in current designs.

Furthermore, a competitive app analysis was conducted about motivational apps that promoted motivational behaviour on their users. These apps were observed and video walkthroughs of those apps and the Recharge app were made. Based on the video walkthroughs the apps were compared to one another. Based on these changes Recharge could implement promising tactics or features from the other apps.

Define

Interviews were performed on current users and HR managers to gain insight into their experience with the Recharge app. Based on these insights and the literature research, clusters were made which eventually led to several design directions. At last, a final design direction was chosen and a design vision was formulated based on these insights.

Develop

After formulating a design vision and direction brainstorming techniques were performed to generate design ideas for the app. These ideas consisted of new feature ideas for the app such as a new onboarding experience, a new checkout experience and a reflection tool to keep users in a continuous feedback loop. Prototypes were made in several programs such as Figma, adobe after effects and adobe XD. With these prototypes, user tests could be conducted. Based on the outcome of the tests, a new iteration loop started and new design ideas and prototypes were made which eventually led to the concept. This concept was tested with the target group and some final recommendations were delivered.

Deliver

The last recommendations that came out of the final user test were implemented and led to the final concept. A strategic roadmap was made to push Recharge in the right direction for the coming period and an evaluation was written to discuss the project's success and limitations. Finally, a reflection took place on my project experience and learning curve.

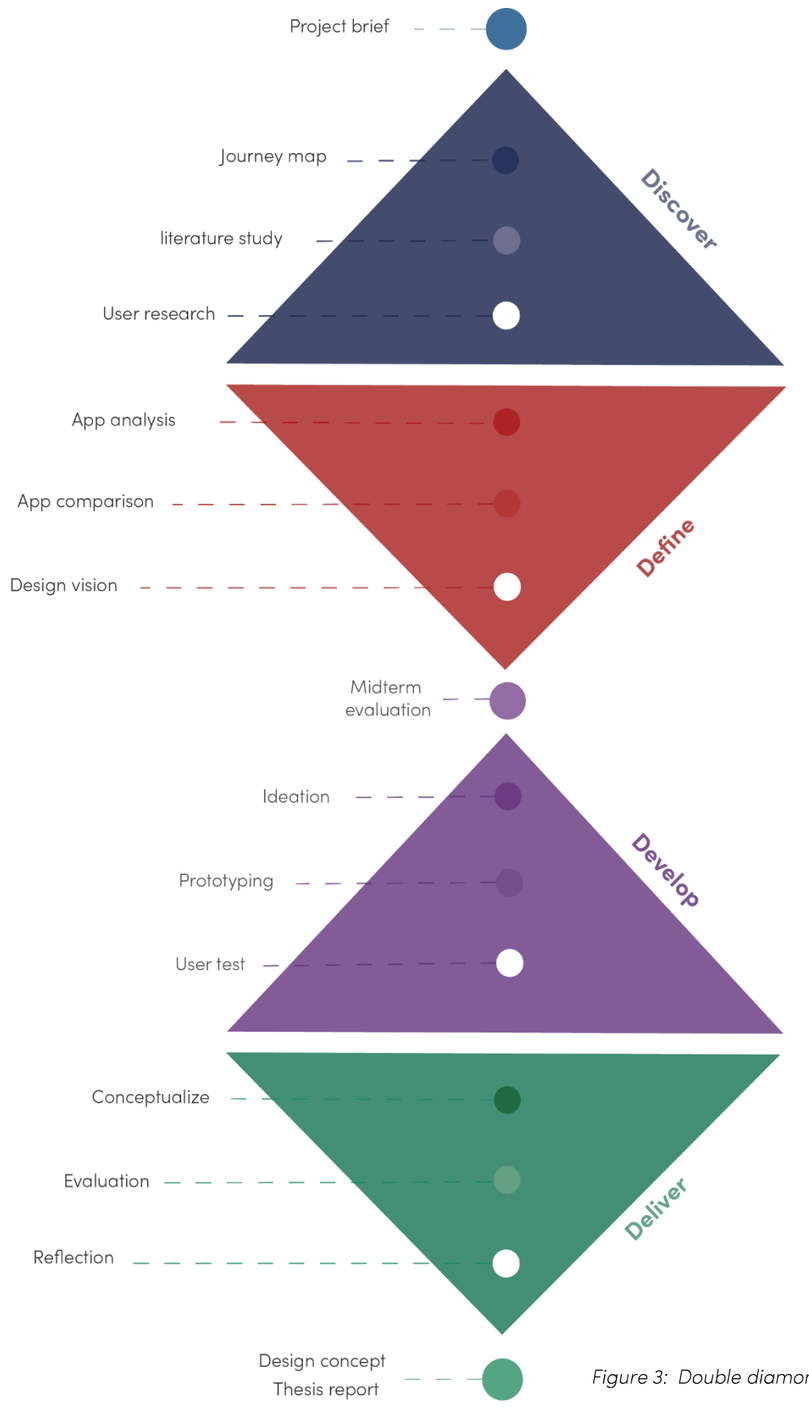


Figure 3: Double diamond method

02
DISCOVER

In this chapter information can be found on

1. Company context
2. Target group
3. The Recharge App
4. Design for Motivation
4. The METUX model
5. Engagement
6. Engagement Guidelines
7. Motivational apps
9. App analysis

2. Domain exploration

In this chapter the domain of the project is explored. Research about the target group, customer context and tactics on how The Recharge Company can play a role in improving the overall experience are discussed. Furthermore, a literature study on motivation and its implementations in design, engagement and well-being are discussed. Lastly, a study is held on existing motivational apps.

2.1 Company context

The marketing strategy of the Recharge company is a business-to-business model which is primarily focussed on bigger companies such as, Unilever, Google, Disney and Rituals. The companies are the ''customers'' that buy licenses for their own employees. The employees of the companies are the ''users'' and have access to the program on the Recharge app. When a company grows, the structure of the company grows as well.

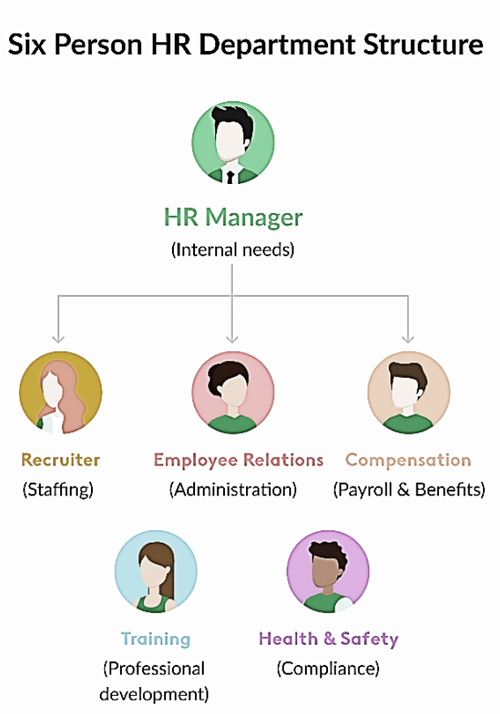


Figure 4: HR department structure

If the company reaches a level where there are around 50-100 employees, the company needs a HR department. Where the HR department is responsible for effectively managing a company's human resources. (Susan M., 2020).

When there are too many employees, the managers lose sight of them. New colleagues are introduced shorter, and employees become more anonymous and feel less connected. Besides having other several job duties, HR is also responsible for the health and wellness of their employees (see figure 4).

This is where Recharge plays a role. Recharge does research on potential customers and eventually makes an appointment with the HR department of the potential customer. By providing the HR department with the Recharge program, their job (in the field of health) becomes easer to manage due to the fact that Recharge wants to improve employees mental and physical health. Besides convincing HR into buying the product, Recharge benefits also by helping the employees to achieve their goals. A good experience with the program leads to more potential customers and it aligns with their company vision. After coming to an agreement, a contract will be set up and the first introduction session with the employees will be made.

The director of Recharge is Hidde de Vries who will visit the client's company and explains to the staff the importance of health and the benefits of the app in order to motivate employees to use the program. Afterwards the director leaves and future face-to-face and online workshop session are planned in for the employees to attend. The detailed journey map of the companies first interaction with an client can be found in figure 5.

As discussed before, the main problem for Recharge is that employees do not feel engaged and motivated enough with the program of the app. In the current situation HR buys the license for the employees. Where it is up for the employees to create a personal account and start following the program. However, to build a better connection among colleagues it could be beneficial to give the managers a role in the program as well.

Furthermore, HR could be more involved in the program by participating in the app or by giving them the option to measure the well-being of their employees. More ideas on motivating employees will be discussed during this project. However, to motivate employees a brief literature study on design for motivation was conducted.

2.2 Target group

The target group of Recharge that eventually will use the program are employees who differ in age, gender, goals, function etc. Therefore, there is not one ''type'' of user which the program should be designed for. The company recommends focusing on young adults around the age of 28-34 who just started a family or serious career and have difficulty in keeping up their old health habits and causes to neglect them due to priority issues (see figure 6). This will be a good start for my project focus. However, other employee personas will still be considered when designing for Recharge.

Figure 6: User Persona

COMPANY JOURNEY MAP

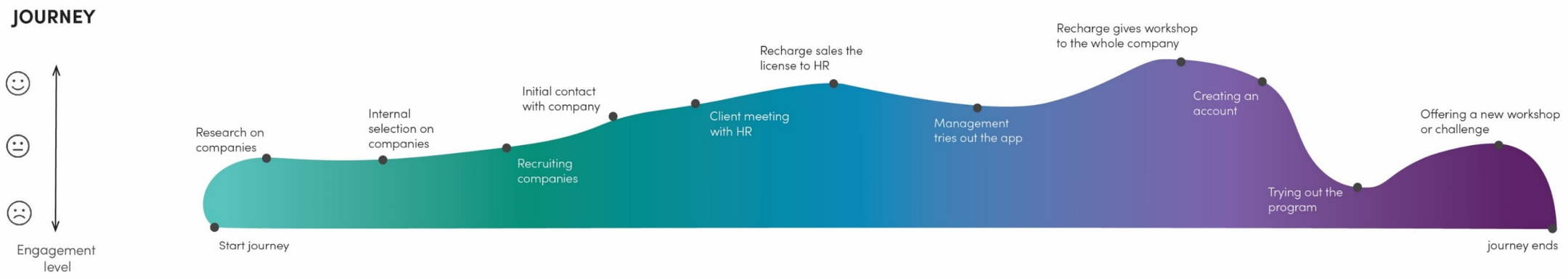
PHASES

Research | Decision making | Purchase | App usage | Preparation | App usage | Preparation

TOUCHPOINTS

PEOPLE & ENVIRONMENTS

JOURNEY



ACTIONS

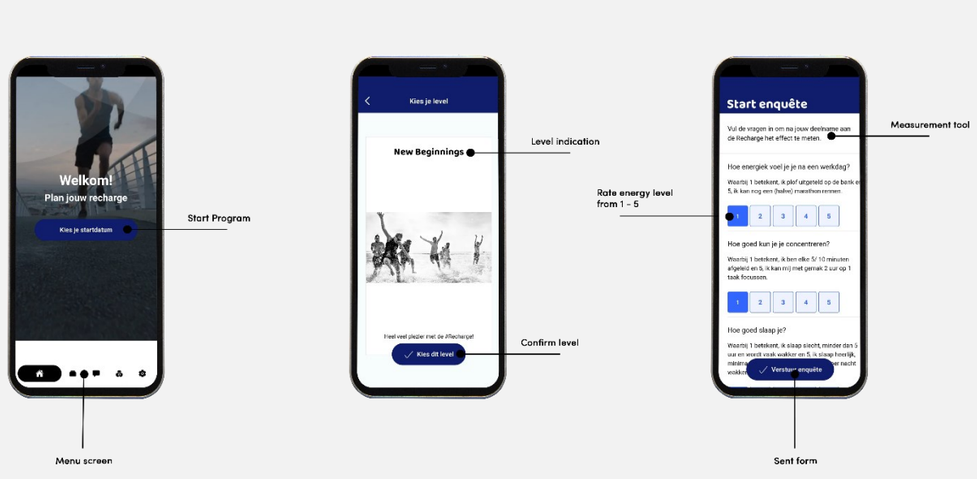
The Recharge company does research on potential companies that want to buy their product. Companies will be seacrhed via google and research will be condusted on what they do for wellbeing	Companies will be selected based on their wellbeing performance and if they are suitable for the Recharge Company. Mostly these will be multinationals	Companies will be emailed or called and will consider if they will buy the license. If they do they call for an appointment or email back.	A Recharge employee will visit someone from HR and have a conversation about buying the product. Eventually both parties agree and the sale is made.	The company tries out the app for the first time and make an account to see their purchase	Recharge gives a introduction workshop for the companies managers and employees to motivate them to use the app and explains why and how it works	Employees use the app for the first time, but lose interest after some days of use.	Recharge gives a new workshop or online challenge to motivate their users. This is an optional choice and does not always occur.

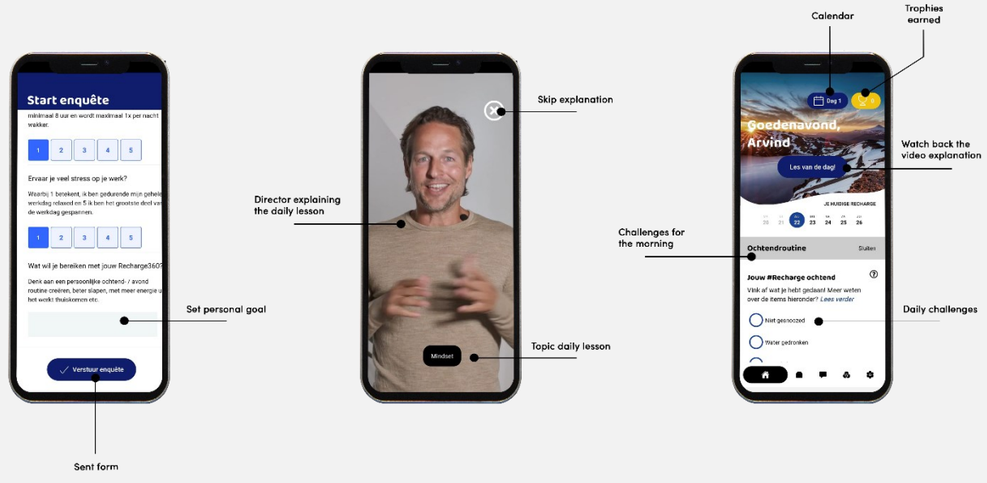
Figure 5: Company journey map

2.3 The Recharge app

Before changing the Recharge program research was conducted on the existing Recharge app. What is the Recharge app like and what is already out there? To answer these questions a short user scenario walkthrough of the app was visualized in the paragraph below. The program of the app is for all users the same. As discussed before, the app mostly consists of:

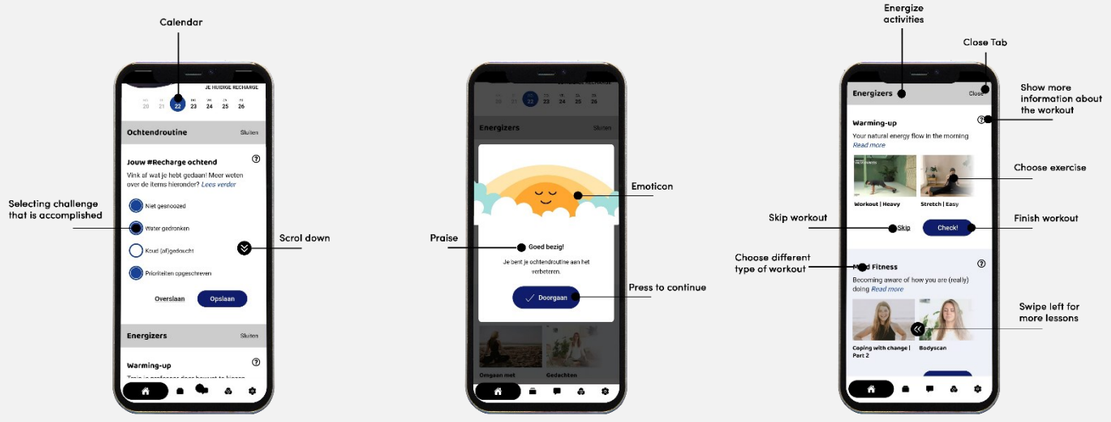
- Mindfulness sessions
- Team competition
- Digital coaching
- Workouts
- Recipes
- Scientific information

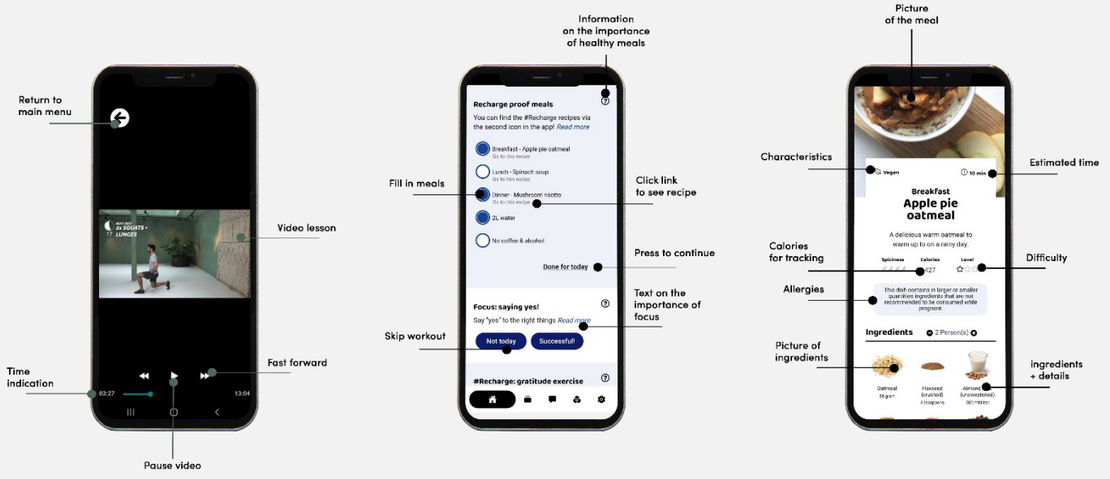




1. The app starts with an onboarding experience. Here the user can choose the level they think that would suit them. Currently, it is only possible to choose the beginner level.

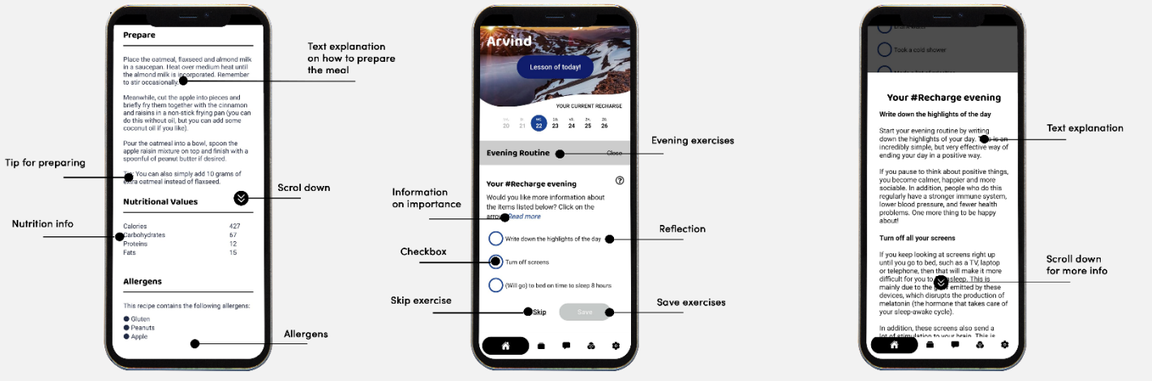
2. After the level is set, a well-being questionnaire is showed. Here Recharge asks users to rate on a scale from 1 to 5 how often they experience: a lack of energy, stress, concentration, and sleep. Lastly, users are asked what they want to achieve with the app. This is an open question where users write down their goals.



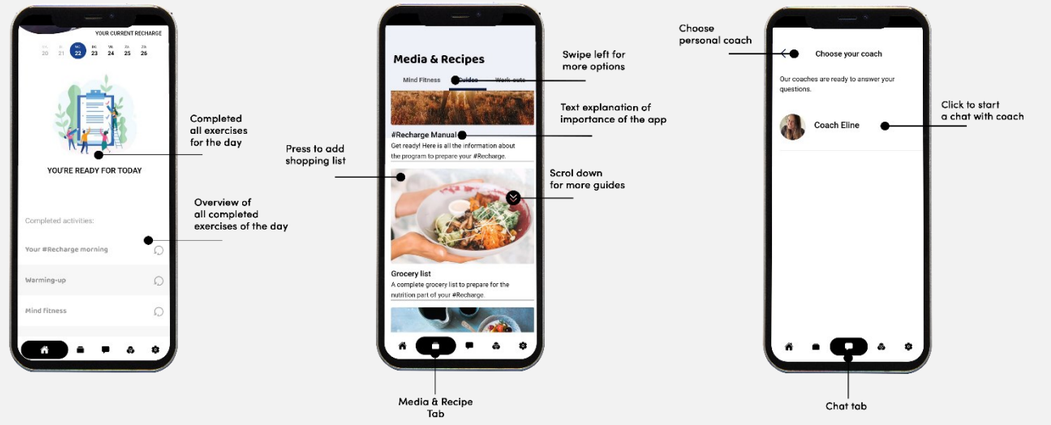


3. After the questions, the Recharge program starts. A checkbox to do list is showed which have to be filled in for the morning, afternoon and evening. The first morning tasks are about taking cold showers, stop snoozing and drinking a glass of water.

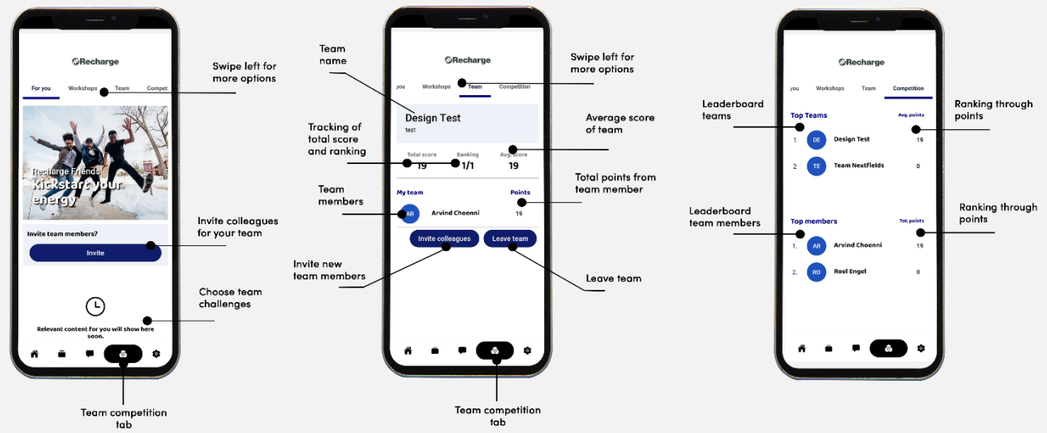
4. After the morning activities users start with their energizers in the afternoon. These tasks consist of doing a workout video lesson or making a healthy lunch. The recipes are clearly described in the app with their nutrition values.



5. In the evenings there are not many tasks left. Recharge advises to turn of their screens before going to bed. Furthermore, writing down the highlights of the day and having 8 hours of sleep is a good way to end the day. When the question mark icon is pressed, more information about sleep and explanations about the tasks will be described.

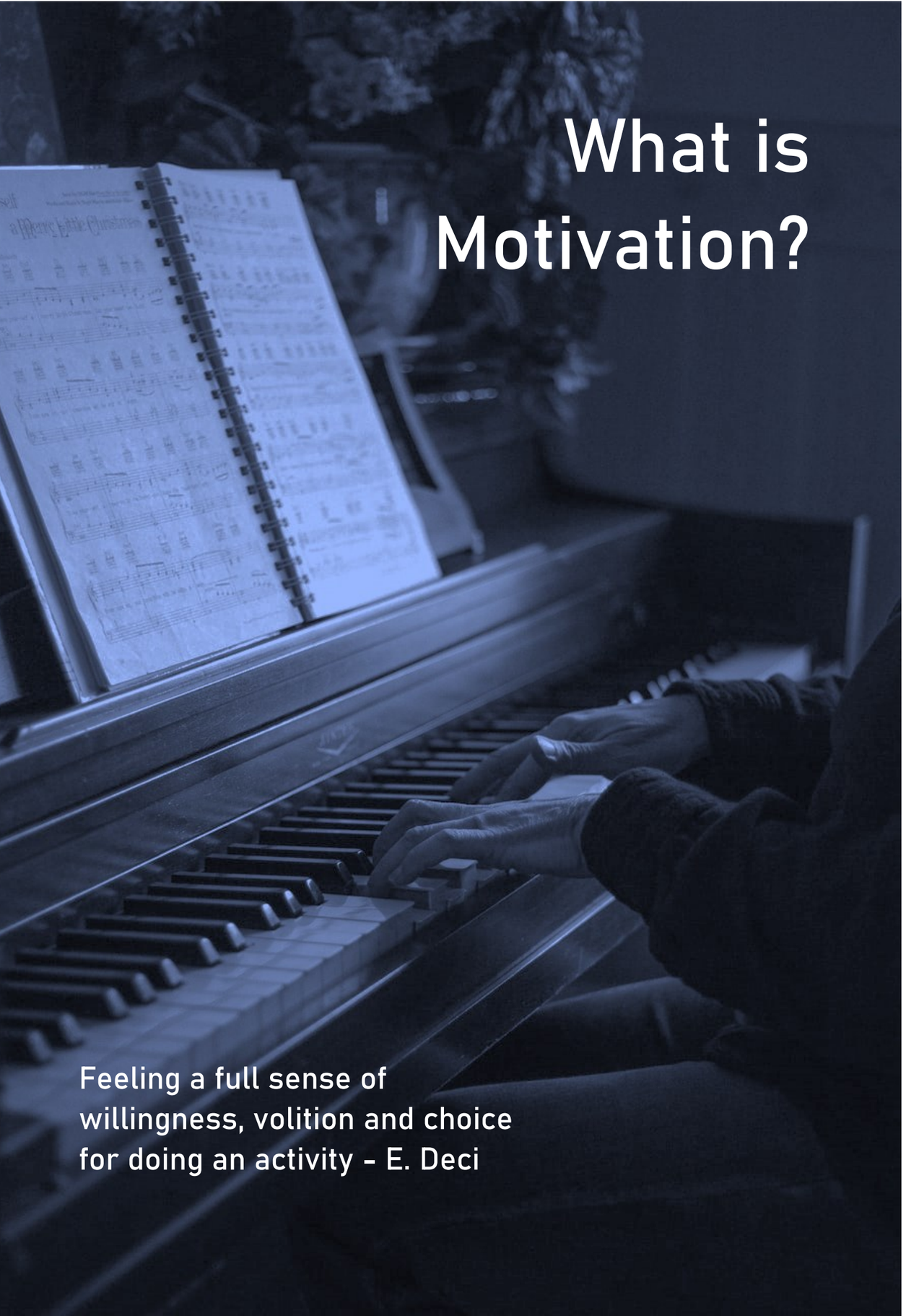


6. At the end of the day, the app shows an overview with the completed tasks that were performed during the day. Furthermore, there is a library tab with extra information about Recharge and well-being. When users still have questions, they can go to the chat tab where you can speak to a personal coach.



7. Lastly, Recharge gives an option to make a team with colleagues. By inviting colleagues, a team is formed and their total scores are calculated. In the competition tab other teams and their scores are visible through a ranking system. The goal of the team is to get as much points as possible in order to become the best team of the platform.

Now that a clear overview is given about Recharge and the app a literature study will be discussed in the following sections to see how motivation and engagement can play a role in digital apps.



2.4 What is motivation?

Motivation is a popular topic among social psychological theories and is often used to explain behaviour. Generally speaking, motivation is used as a term for "why" a person does something and refers back to the driving force of human action. It is an internal process where people want to change themselves or their environment. When people feel motivated, they get energized, move and take action (Hagger, M. S., & 2007). While there are debates about what the structure of motivation is, the most widely studied forms are extrinsic and intrinsic motivation. One of the most influential theories of intrinsic motivation is the Self-determination theory (SDT) of Edward L. Deci and Richard Ryan (2012). The SDT is a broad framework that is used to understand intrinsic and extrinsic motivation and shows which factors can facilitate or undermine them. In the following sections research from SDT shows what is meant by both intrinsic and extrinsic motivation and shows what is needed to successfully get in one state.

Intrinsic motivation

According to E. Deci and R. Ryan there is a primary distinction between intrinsic motivation and extrinsic motivation. Intrinsic motivation describes the feeling that people experience when a full sense of willingness, volition and choice occurs. If people participate in a certain activity with a sense of enjoyment, value and interest then it is likely that people are intrinsically motivated. When this happens the performance, well-being and engagement increase. Furthermore, the theory states that all human beings have a set of certain psychological needs. E. Deci and R. Ryan distinguish the three most important needs when it comes to motivation which are competence, autonomy and relatedness (see figure 7). When these three needs are fulfilled, it leads to an increase in intrinsic motivation.

- **Competence** is the need to feel confident and effective in the activity a person participates in. People want to be in control which allows them to experience mastery over a task or activity.
- **Relatedness** is the need to care and feel cared for by others. People feel like they belong in a group.
- **Autonomy** is the need to feel in control of one's behaviour. People feel independent and are able to make their own choice.

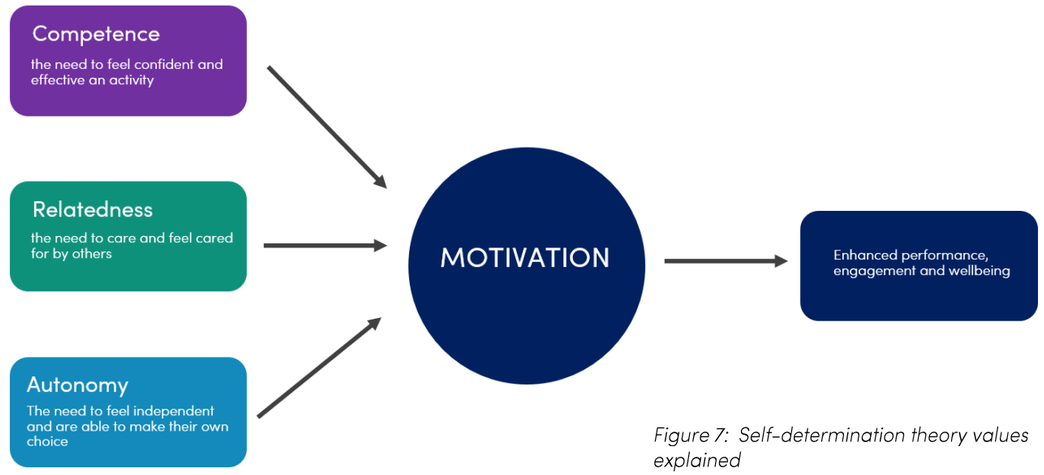


Figure 7: Self-determination theory values explained

Intrinsic motivation in design

When designing for intrinsic motivation it is important to keep the three needs, autonomy, competence and relatedness in mind. Furthermore, according to Hassenzahl, M. (2010) the three needs should be measurable, intrinsically rewarding and designers do not have to fear the risk of overfilling those needs. People can not experience being too competent or feel too much relatedness among others. This makes the three needs an easy target to encourage in design. Based on the three needs, design tactics and methods were formulated and were kept in mind when designing for motivational purposes.

Design for competence requires that the design should offer a certain level of challenge. This should not be too easy or too difficult otherwise it would lead for competence to decrease. However, at a certain point participating at a level which is enjoyable can become repetitive and could eventually be boring. Therefore, a continuously learning process should occur which is in balance between the skill of the user and the manageability of the challenges (Krippendorff*, K. 2004). Therefore, both novelty and difficulty are important factors to increase engagement levels within design. Where novelty can cause new opportunities for the design e.g., including new design features (Lomas, J. D., Koedinger, K., 2017).

Furthermore, gamification can be a powerful tool to promote motivation. Most games consist of conquering quests or competition among other players. Competition is a good example to show how one feature can target several SDT needs. Creating a community which causes an increase in connectedness among other players (like seen in the MMORPG community) stimulates feelings of relatedness. Players feel strongly to accomplish a quest or win a competition since they feel responsible for their decisions during the game which connects also to the need for competence (Lamprinou, D., 2015).

Design for relatedness is used to let people feel more connected which increases people's general well-being. However, not all social interactions are pleasant to boost connectedness. Many app features that overstimulate communication can lead to frustration which leads to a decrease in engagement and well-being (Peters, D., 2018). With all the features on social media e.g. video chats, likes, emoticons etc. it is important to ensure features are meaningful and satisfy relatedness rather than being a form of empty connections or frustrating interactions (Sheldon, K. M., 2011).

Design for autonomy is mostly seen in game design. The design should offer enough choice for the user over time and actions should not be demanded. Furthermore, self-personalization is a great tool to let the user feel a sense of ownership which leads to an increase in feeling in control (Ford, et al. 2012). When looking at interfaces and health apps autonomy plays a role as well. By removing daily obstacles, providing tracking methods and behaviour change tools, users feel more in control to reach their goals. It becomes easier for the users to achieve their goals and it helps them to realize their personal values more effectively (Peters, D., 2018).

Figure 8: Visual representation of the SDT values in design

Extrinsic motivation

The main difference between intrinsic and extrinsic motivation is that intrinsic is the motivation that comes within people. Where extrinsic motivation arises from the outside environmental influences, for example receiving a reward or avoiding a punishment (see figure 9). Although studies have shown that when people participate in a certain activity to gain a reward or punishment. The reason for achieving a reward or avoiding a punishment feels pressured, obliged and demanded which can diminish feelings of autonomy and leads to lower levels of performance, engagement and well-being compared to intrinsic motivation (Deci, E. L., & Ryan, R. M. 2000).

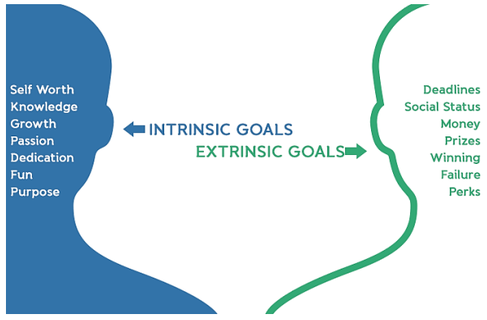


Figure 9: Intrinsic goals vs extrinsic goals

However, this is not always the case. According to Cerasoli, (2014), a reward directly linked to performance could lower SDT levels but would not negatively influence performance levels. The study shows how external rewards (incentives) can be beneficial for intrinsic behaviour and advises making use of less noticeable rewards. When the rewards get too big or appealing, intrinsic behaviour and performance could get crowded out. (Cerasoli, (2014). Furthermore, a survey (n=291) which was conducted in multiple industries showed that extrinsic motivation could decrease satisfaction levels of competence and autonomy. However, when extrinsic motivation is internalized (a process that takes a value or regulation and transforms them into one's own) and integrated it supports intrinsic motivation and behaviour intention (Mitchell, R., 2020). Therefore, extrinsic motivation can still be an effective source to motivate people and become autonomous or self-determined (Deci, E. L., & Ryan, R. M., 2000).

Extrinsic motivation in design

When using extrinsic motivators it mostly involves a reward system which can be tangible such as trophies, money, prizes etc. or intangible such as recognition, feedback, praise etc. Many companies and services make use of these extrinsic motivators. As discussed before, it can be difficult to implement extrinsic motivators because they can have the opposite effect. However, to still make effective use of external motivators in design it is important to know when to implement them. Studies have shown that extrinsic motivators are best used when:

- It provides a relevant source of rich informative feedback. Where the feedback should enhance feelings of mastery rather than give users a feeling of emptiness and meaningless numbers, for example praising the user when their performance is higher compared to other users. (Jansen, A., Van Mechelen et al. 2017).

- A reward is given when the user is not yet rewarded by its own intrinsically behaviour. Otherwise, the reward becomes excessive which leads to an overjustification effect (where an external factor could diminish intrinsic motivation). The best moment to give rewards is to promote a task or skill where the user was previously not interested in.

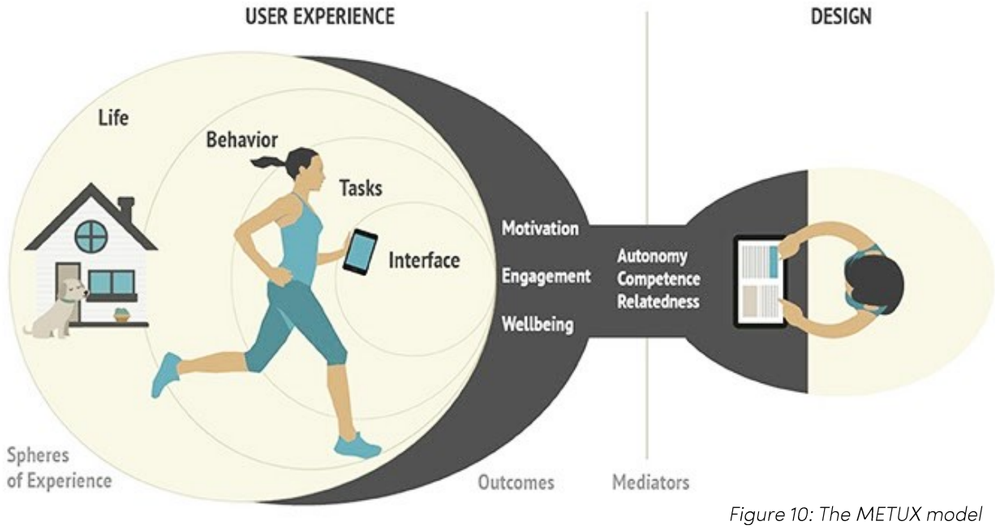


Figure 10: The METUX model

- A short-term motivator for a small specific purpose is needed. The external reward will boost the user's motivation. To keep the motivation high the rewards should enhance over time. Otherwise, the effectiveness of the reward system will decrease (Tranquillo J, Stecker M, 2016). However, designers should be careful, users will not become dependent on them which will diminish intrinsic behaviour (Cerasoli, (2014).

- When a subgoal is achieved it is best to respond with meaningful praise. A study with a group of cycling instructors showed that when celebrating a subgoal with meaningful praise helped to support the user's feelings of competence and overall motivation which leads to wanting to achieve a subgoal again Hancox, J. (2018).

2.5 The METUX model

Peter et al., 2018 developed a model for the experience of digital learning tools called ''Motivation, Engagement and Thriving in User Experience (METUX)'' was developed which is grounded on the three basic needs of the Self-Determination Theory (SDT). The METUX model provides a framework which shows how the interaction with the content of digital designs and its features can enhance or hinder engagement, learning, well-being and the three SDT needs through different experiences and spheres. (Peters, D., Calvo, R. A, 2018). This is relevant to the Recharge program due to the fact the company works through a digital program as well.

For technology to positively impact the factors mentioned above, the METUX model proposes six different spheres which are the adoption, interface, task, behaviour, life and society (see figure 10). These six spheres are important to keep in mind when designing a digital tool where only the first 5 are relevant for Recharge.

1) When the Recharge app would be placed in the spheres it would first go through the ***adoption sphere***. This is the first sphere which consists of users becoming aware of the new digital app.

2) Secondly, the ***interface sphere*** consists of interacting with the app which includes usability, user interface, navigation, aesthetics etc. This can enhance a positive and negative experience with the app.

3) Thirdly, there is a ***task sphere*** which consists of engaging a specific design feature. For Recharge this can be following a workout video or counting calories. Where again each task can impact the users' experience and therefore should be designed carefully.

4) The fourth sphere is the ***behaviour sphere*** which consists of engaging in a behaviour that the app wants to stimulate or discard. For Recharge this would be for example placing a healthy diet, exercise and mindfulness in users' daily routine.

5) The fifth sphere is the ***experience of life sphere*** which is the sphere Recharge wants to target for their users and the goal of the company by learning users how to diet, work out and manage mental health effectively, users create a habit for it which leads increase in life satisfaction.

According to the model of Peter et al. (2018) to tackle the drop off (~80%), it would be a smart move to focus on making improvements to the *interface* and *task* sphere. In this way, the *behaviour* sphere can be reached and Recharge can finally make a step towards the *life* sphere where the goal of the company lies.

When looking at figure 11, a timeline is shown of what users experience when going through app. To indicate the problem we start with 1000 employees who become aware of the app during the introduction workshop of Hidde. These 1000 employees could be potential users of Recharge. Eventually, only 250 employees download the app. Here again, a big drop off appears which contains 750 people in total. This is another touchpoint within the timeline that could be tackled. However, some of the employees may have no interest at all in the app and therefore do not necessarily have to be potential users. Eventually, 200 users go through the interface sphere and around 180 try out a feature of the app. After the task sphere, only 36 people remain which is the focus point of the project (these numbers were given by Recharge).

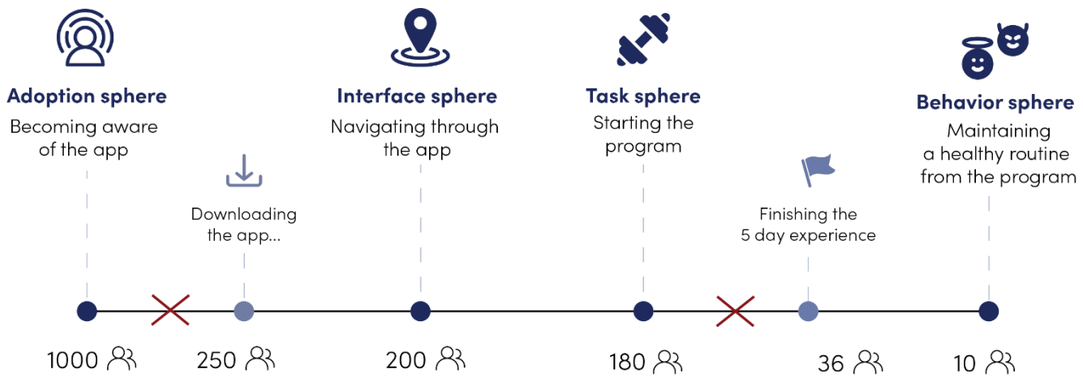


Figure 11: User sphere timeline based on the METUX model and data of Recharge.

2.6 Engagement (UES)

The METUX model discusses that the three needs, autonomy, relatedness and competence promote user engagement. The study of Ford et al (2012) shows for example, how whole-body games for kindergarten children can increase engagement when the three SDT needs are incorporated. Other research argues that user engagement in phone usage is enhanced by providing meaningful choices, content and information. According to O'Brien et al (2018) engagement could be categorized into six subsections:

- **Focus attention**, which is feeling totally absorbed in the interaction and losing track of time.
- **Perceived usability,** which is a negative experience with the interface due to poor interactions, control and effort.
- **Aesthetic appeal,** which is the attractiveness of the interface.
- **Felt involvement,** which is the sense of feeling ''drawn in'' and having fun.
- **Endurability,** which is the overall success level of the interaction and the user's willingness to recommend an app to others.
- **Novelty,** which is the novelty, curiosity or interest users have in the interactive task.

Each of the sections shows what is needed for a user to feel engaged with an app. Based on these sections a user assessment form is created which consists of 31 questionnaires. This is known as the User Engagement Scale (UES) and was taken into account when designing the Recharge app.

When looking at figure 12 the METUX model shows that when users experience feelings of competence and autonomy at the interface level, for example ''feeling capable and effective when using the Recharge app'' and ''feeling that the app provides enough choice and customisation freedom'' the prediction of having a successful experience in the task level increases. When looking back at the engagement theory of O'Brien (2018) the study shows also that the topic of engagement, learning and well-being can be targeted based on the SDT needs, for example, an increase in task competence increases perceived usability and aesthetic appeal as well. However, negatively influences focus attention. Therefore, when tackling the desired outcome, it can be important to look at how the three needs relate back to engagement.

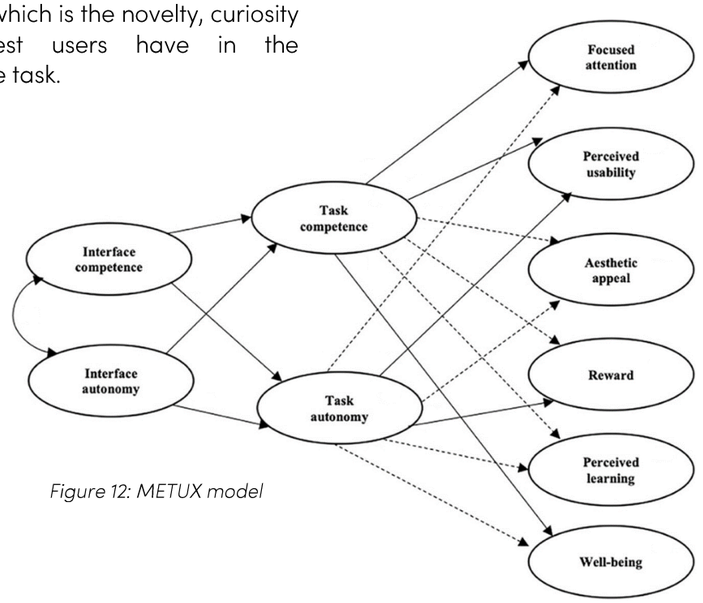


Figure 12: METUX model

2.7 Engagement guidelines

According to Wei, Y. (2020) user engagement refers to high uptake, high user experience and a good adherence over a long period of time. Many applications that want to improve people's health fail to engage users and eventually leads to people dropping out of the app. For example, A smoking cessation app did not succeed to engage their users which led to nearly half of the users not completing the program in the first two-weeks Cole-Lewis, H. (2017).

Not only this health program camps with low participation rates. When looking at web-based physical activity interventions dropout attrition vary between 0 and 62% This problem looks similar when looking at Recharge where a dropout of 82% occurs. Therefore, Wei, Y. (2020) developed a well-established set of guidelines in order to stimulate engagement in health intervention design. These guidelines are based on a broad framework of literature studies. Where in total, 7 themes and 29 guidelines were generated.

The guidelines that are presented on the right, show what Recharge current app design already implemented or what is partly implemented. These guidelines were also taken into account when designing for ideas and concepts. When looking at the statements, Recharge scored high on message presentation and credibility. Here message presentation could use some slight improvements. Furthermore, communication and interface aesthetic were fine, but both needed some more improvements to really engage users. The main focus on improving the Recharge app would be on navigation and personalization where the scores are the lowest, especially personalization. When designing the concept, the current empty engagement guidelines got a closer look and were filled in if they found to be relevant for this project. Furthermore, the current checked boxes were taken into account as well to make sure they were still present in the design.

Interface aesthetic

- ☐ The screen shows a graphic presentation rather than too much information
- ☐ Pleasing color scheme with bright colors (eg, light green, white)
- ☑ Simple screen presentation that is not overcrowded
- ☑ Coherent scheme of colors, pictures, and themes throughout the intervention

Navigation

- ☑ Efficient access to the information provided, such as in a simple menu, and few buttons on the screen
- ☐ Guidance provided that explains how the app works
- ☐ Search bar or menu bar provided to accelerate the process of finding certain information

Personalization

- ☐ Assessment of the preferences and health status of the user
- ☐ Continuous monitoring of health and behaviour changes
- ☑ Provision of a diary or note-taking function
- ☐ Provision of personalized information matched to the user's characteristics
- ☐ Provision of feedback on the continuously monitored data
- ☐ Visual presentation of feedback, such as in graphs and tables
- ☐ Provision of autonomy to customize the app, for example, allowing the users to choose when they receive reminders or to set a goal about their future use of the app
- ☐ Provision of material incentives (eg, cash or gifts), intangible rewards (eg, rankings, and points), or messages of congratulations when a task is completed
- ☑ Sending of reminders to facilitate the scheduling of tasks and to ensure continuous use

Communication

- ☐ Provision of access to other people with similar experiences through an online forum, social community, or instant messages
- ☑ Provision of access to a health care provider through email, text message, or live chat

Message presentation

- ☑ Use of simple nontechnical language that can be readily understood
- ☑ Use of specific descriptions when providing actionable message
- ☑ Use of a positive and non-judgmental tone of voice
- ☐ Provision of multimedia messages, for example, text combined with relevant pictures or videos
- ☐ Presentation of information in the form of knowledge quizzes and games, if possible
- ☑ Use of various font styles, sizes, and colors to highlight information
- ☐ Editing of the text to make it as concise as possible

Credibility

- ☑ Provision of evidence-based information from credible sources
- ☑ Provision of a privacy policy that gives users the right to decide whether others can access their data and ensures the users remain anonymous when sharing their data with the health care providers or for research

2.8 Motivational apps

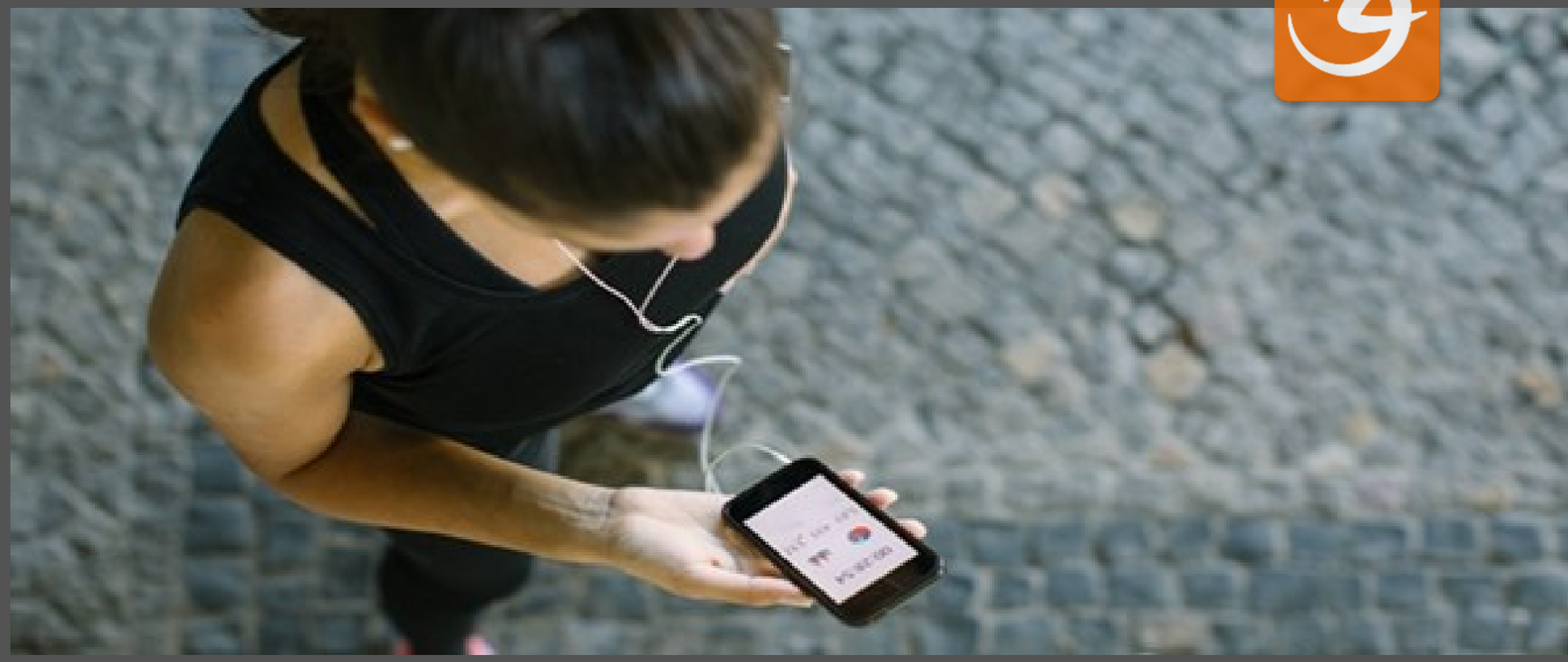
Nowadays, there are many applications and smart wearables on the market which help users to obtain a more active and healthier lifestyle. When these apps make use of motivational tactics that stimulate people to use the app more frequently and let people learn a healthy habit or skill, we can classify them as motivational apps. These apps do not necessarily have to be operating in a health context. Duolingo is a good example of a motivational app that makes use of several motivating tactics to learn a new skill and is not operating in the health field. Recent studies (Edwards, E. A., 2016) show that there are 100K health apps available for people's smartphones. The most popular applications focus on exercise, diet and weight. With around 500M users designing a health app to stimulate behaviour change, the topic is not something new anymore. However, designing for motivation has its complexity and therefore several apps fail to reach their potential.

Like the Recharge app, there are more premium apps where users have access to personal e-coaching to keep them on track and stay engaged with the app. A problem that e-coaches face with a virtual program is that users stop their training without notifying them (Pilloni, P., 2018). The U4fit e-coaching ecosystem wanted to solve the motivational loss of athletes by developing a recommender system.

By monitoring the athlete's performance through the app, the recommender system can predict when an athlete would lose motivation. With this information, the e-coaches can get informed and intervene to keep the athletes on track. Working with recommendations like these can be a great opportunity for Recharge to come in closer contact with their users and to allow them to intervene with their users before stopping with the Recharge program. However, the reasons why people lose motivation while using motivational apps is the main problem of it all. Therefore, it is interesting to see which factors may increase motivation loss and why some apps succeed in engaging their users and others not.

Survey

To find out why people stop using motivational apps or still use motivational apps we conducted a survey (n=24). The goal of this survey was to target which design features caused that users got demotivated, and which led to an increase in motivation. The design features of the survey arises from the SDT basic needs and features from other motivational apps. For the survey 24 participants (male and female) were found online which were colleagues, friends or students between the age of 22 and 50 that have been using motivational apps or are still using these kinds of apps to learn a new habit or skill.



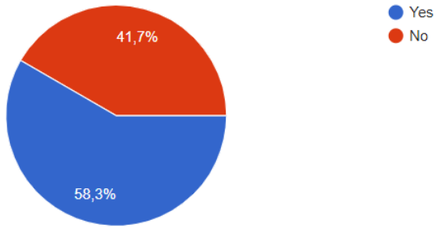


Figure 13: a diagram which shows the number of users that still make use of a motivational app.

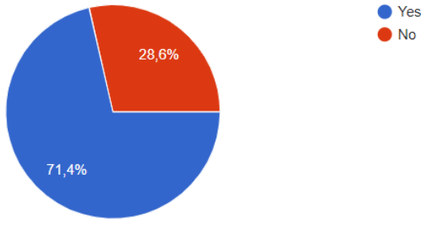


Figure 14: a diagram which shows the number of users that do not use a motivational app anymore.

According to the survey, 58,3% of all the participants were still using well-being apps (see figure 13). Furthermore, the majority of the participants 71,4% have used an app where motivation loss was experienced (see figure 14). This survey can be found in appendix 2.

Results

In figure 15 the reasons why users are still encouraged to use a motivational apps were visualized in a bar chart. According to the results of the survey, giving users a feeling that they reached their goals with the app, the app's convenience and providing a clear track of performance scored highest. Furthermore, offering enough new features/services which make the apps refreshing, providing enough customization and giving reminders and information were design features which scored high as well.

These are the design features users liked in the app and were labelled as motivational. However, users indicated features like social connections, personalisation praise, and accurate information were lacking as well in these apps and could be improved to create an optimal experience with the apps.

Moreover, the result of the survey showed reasons why people stopped using motivational apps (see figure 16). The main reasons for people to stop using an app were because users forgot to use the app, a lack of personalisation within the app and the choices in the app were limited. Furthermore, the app was labelled as being repetitive, lacking gamification, lacking external rewards and the interaction with the app was experienced as complex and chaotic.

Conclusion

Reasons for maintaining an app were primarily concerned with the convenience of the app, tracking performance and the assistance in reaching people's goals. This relates back to the need for competence where users get a feeling of mastery in effectiveness and skill. Satisfying the need for relatedness and autonomy by stimulating social connections and personalisation would be a great opportunity to implement. These were design features users missed in the apps that were currently used. This can be seen back in the bar chart of figure 16 as well where users felt limited in choice and personalisation (L and M). Again, a relation is found in a lack of autonomy. Knowing that design features linked to the three needs would be beneficial to implement in motivational applications, it would be useful to see how current motivational apps make use of these principles.

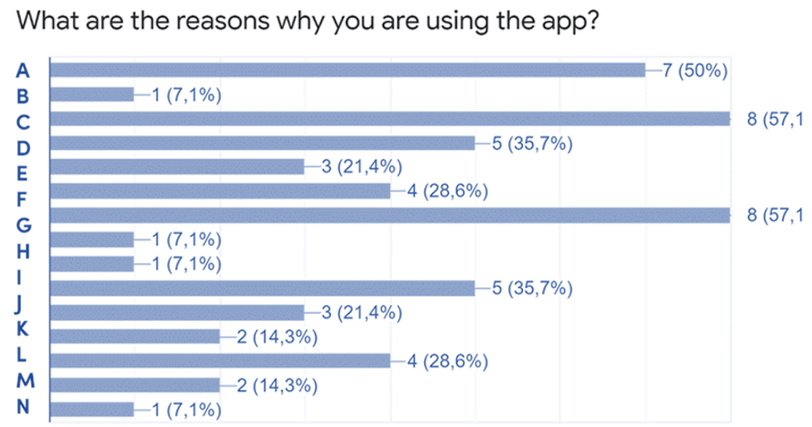


Figure 15: A bar chart which shows what the reasons are for users to maintain a motivational app.

A: I have the feeling I am reaching my goal
B: The app is challenging enough
C: The app is easy in use
D: The app offers enough new features/services
E: The app gives me positive feedback to improve myself
F: The reminds me to stay on track
G: I can clearly keep track on my performance in the app
H: There is a nice social aspect in the app
I: I like the social competition with others in the app
J: There is enough customization to make it work for me
K: There are many choices which gives me enough freedom
L: There are game elements in the app which makes it fun to use

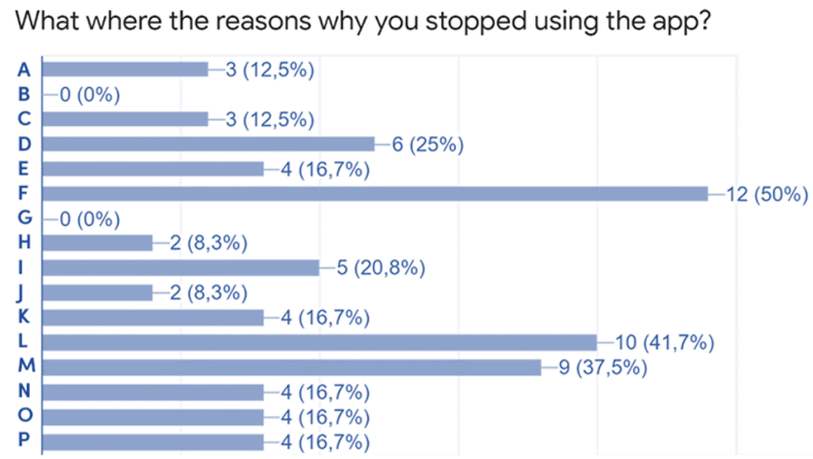


Figure 16: A bar chart which shows what the reasons are for users to discard a motivational app.

A: I reached my goal
B: The app was not challenging enough
C: The app was too difficult
D: T The app was too repetitive
E: The app did not give enough feedback
F: I forgot to use the app
G: There was no clear performance track
H: I found a better app
I: The interaction with the app was to complex/chaotic
J: I missed social connections in the app
K: I missed competition with others
L: There was not enough personalization
M: The choices in the app are limited
N: There are no game elements in the app which makes it boring
O: The app did not give enough information on the topics
P: The app did not provide rewards which demotivates me to use the app

2.9 Motivational app analysis

Motivational apps make use of numerous strategies for users to actively participate in the app. These methods can vary from rewards to giving feedback on performance over time. In this section, an app analysis was conducted to find design strategies and characteristics of motivational apps that are currently on the market and operate in a health, educational or entertainment domain. These apps were chosen based on their popularity, function and rating from the play store. Which could vary from free to premium apps. Furthermore, competing apps from the Recharge Company were taken into account as well. These apps were provided by the Recharge company. By decomposing all the apps to their features, it becomes easier to spot overlaps in specific strategies and design characteristics. With these findings new inspiration, ideas and tactics could be formulated for the Recharge program to implement.

Methodology

For this research 10 apps in total were analysed (see figure 17). As discussed before, the apps were decomposed into features which could be relevant to promote motivation. Each app was installed from the Playstore and placed on the same device. When fully downloaded a screen recording was made. When the screen was recorded the app would be opened. In this way, the first interaction with the app was captured and one-time questions or user data was taken into account during the analysis as well. The goal of the screen records was to show the navigation through the app and pinpoint the interesting design choices and features later on. After going through the whole app and all tabs and features were looked into, the screen recording would stop. All the screen records were placed into the program Pinter in order to analyse each video navigation (see figure 18).

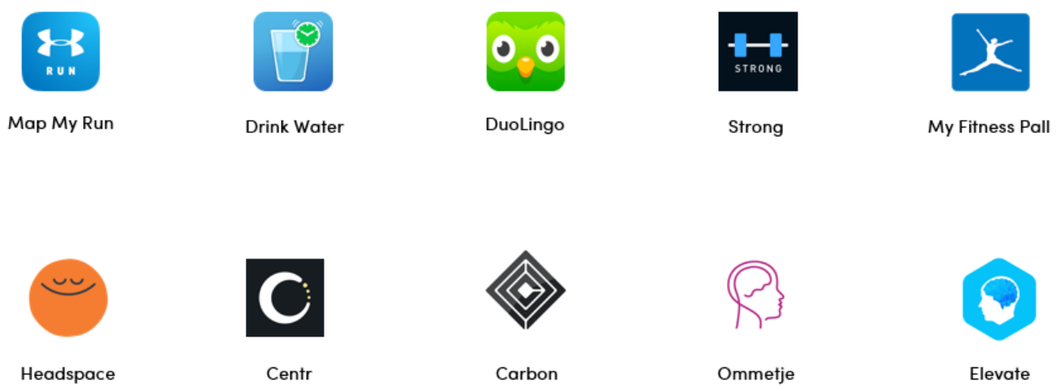
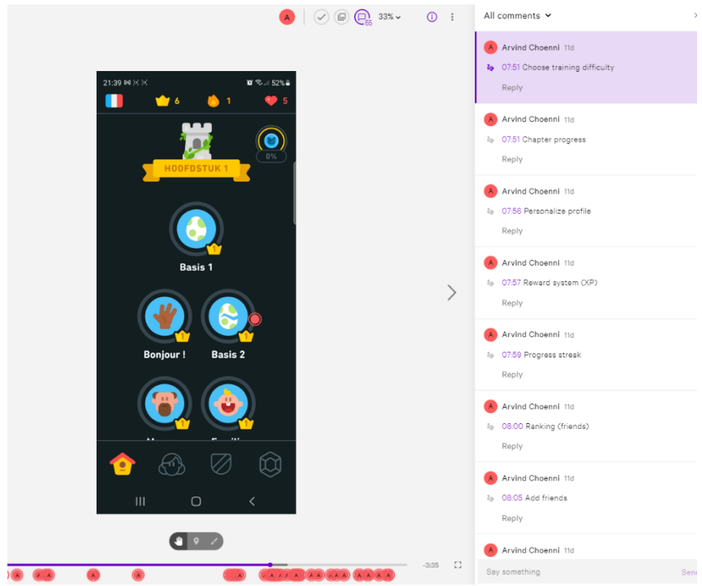


Figure 17: 10 motivational apps that were studied



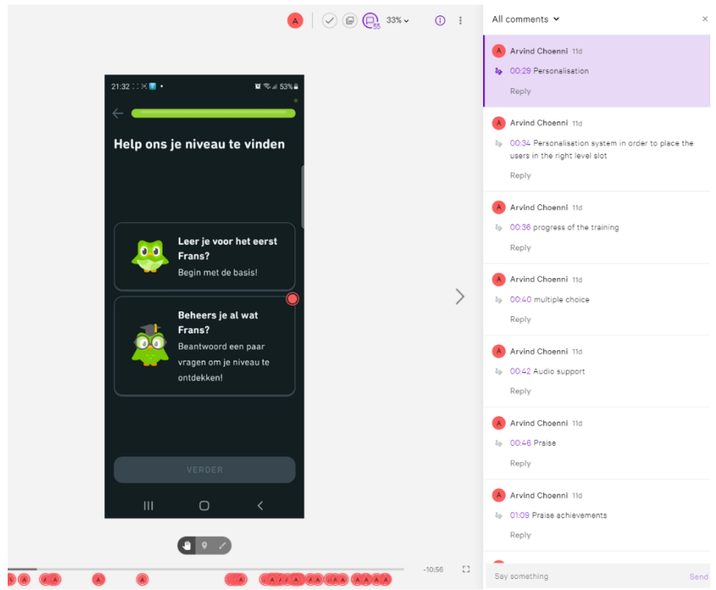


Figure 18: App analysis walkthrough

Analysis

The decomposition procedure was derived from the thematic analysis which offers patterns and themes based on qualitative data codes (Braun, V., 2012). The purpose of the analysis is to spot relevant collective themes within the selected app. The method consists of three stages. As discussed before, the method started with a coding stage in Picter where all kinds of elements of the selected app were written down. When similar elements were found in several apps the elements became part of the coding data. After the 10th app, the coding data became quite similar which is why no more than 10 apps were used for this analysis. The coding data consisted of elements from the app such as sharing pictures, leader boards or the use of emoticons. Later on, the coding data would be clustered into relevant core themes/features such as challenge, personalisation or competition. These themes were formulated by clustering the coding data and seeing in what theme they would fit. This methodology was inspired by the paper of Villalobos-Zúñiga, G (2020) which uses a similar approach of clustering data for well-being apps. At last, the themes were linked back to the SDT values to see in what section of motivation the themes occur. This was interesting because with this in mind it was possible to see how other apps consciously or subconsciously implement motivational values and which SDT core values would occur more often or if it was divided equally (see figure 19).

Results

After analysing the 10 motivational apps there were 20 relevant features found that occurred in several of these apps. Figure 20 illustrates how many times a feature was covered in the apps. In the paragraphs below each feature will shortly be discussed with its relation to the SDT values. At last, The Recharge app was placed into a thematic analysis and a comparison was made between the Recharge app and the 10 motivational apps. The reason for this was to see what is already covered in the Recharge app and what features are lacking and could be beneficial to add.

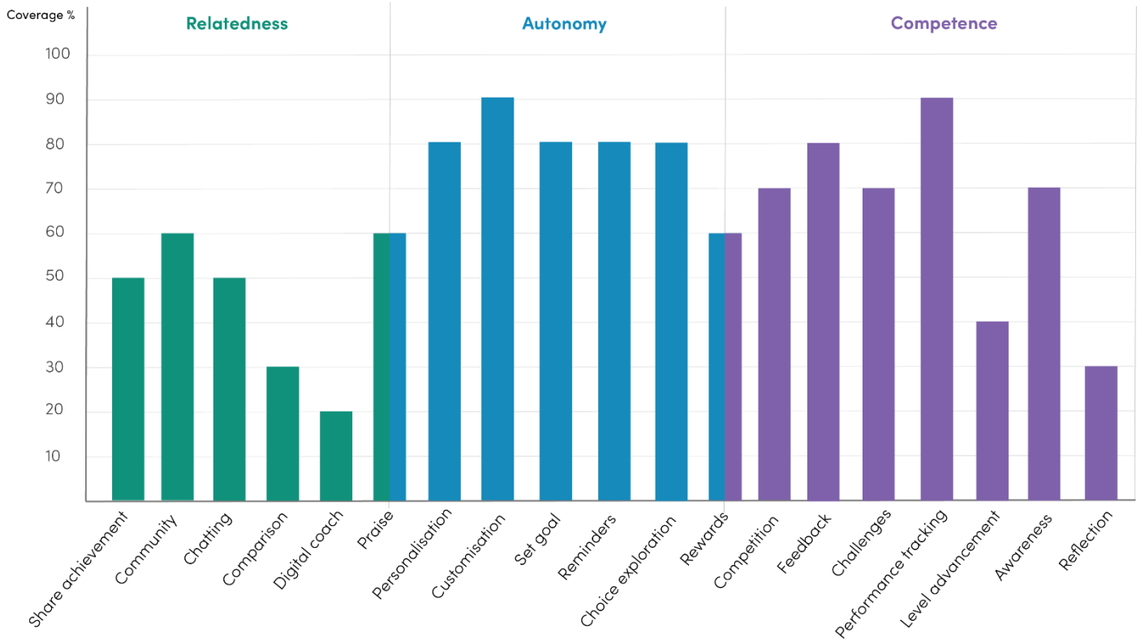


Figure 20: Bar chart of app coverage %

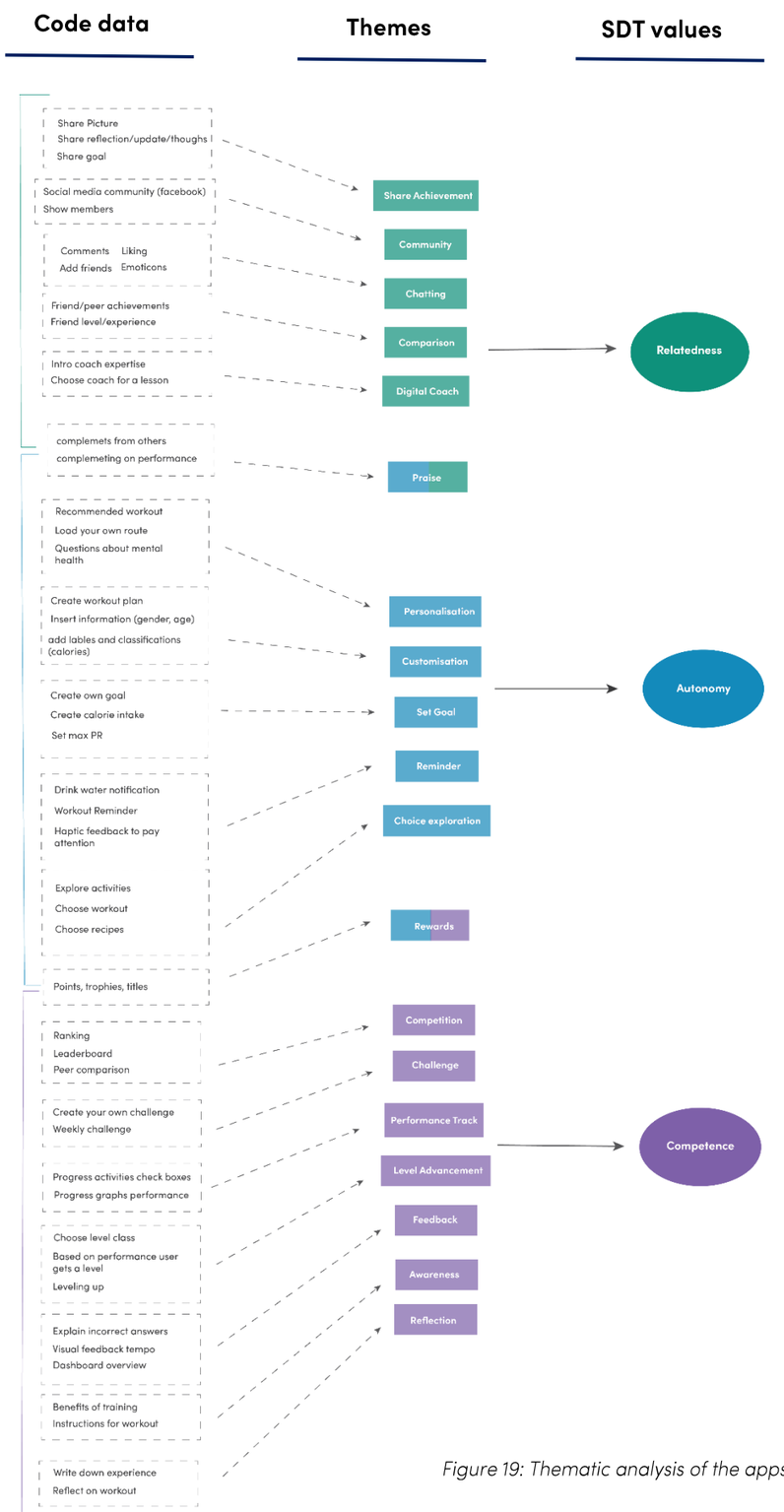


Figure 19: Thematic analysis of the apps

Relatedness

When looking at relatedness we look at how features could increase the feeling of connectedness and how it could stimulate social interaction. The first feature is Sharing achievements with others which can be done through the program or another social media app. The app *Centr* makes use of Facebook to create a private community where users can share their results, complement each other or simply have a little chat. Achievement sharing was used in half of the apps and in most apps (such as the Centr community) many people seem to enjoy it.

Creating a community is an obvious and popular choice to stimulate relatedness in apps. However, some communities are closer than others and creating a tight community can be difficult. When a program makes use of a community users get a sense of belongingness which stimulated relatedness.

However, in the app *MyFitnessPal* the community only consist of asking common questions, discussions and tips. The community stays somewhat impersonal and having a clear feed is lacking.

Chatting is a popular element when a community is created and can simply be done with a friend that participates in the app as well. Using emojis, likes and pictures makes the conversation more fun and leads to users having more meaningful interactions with friends through the app. However, designers should take into account that chatting could also lead to criticism or annoying messages which could bother the user or make them feel insecure. Therefore, monitoring these chat systems would be wise.

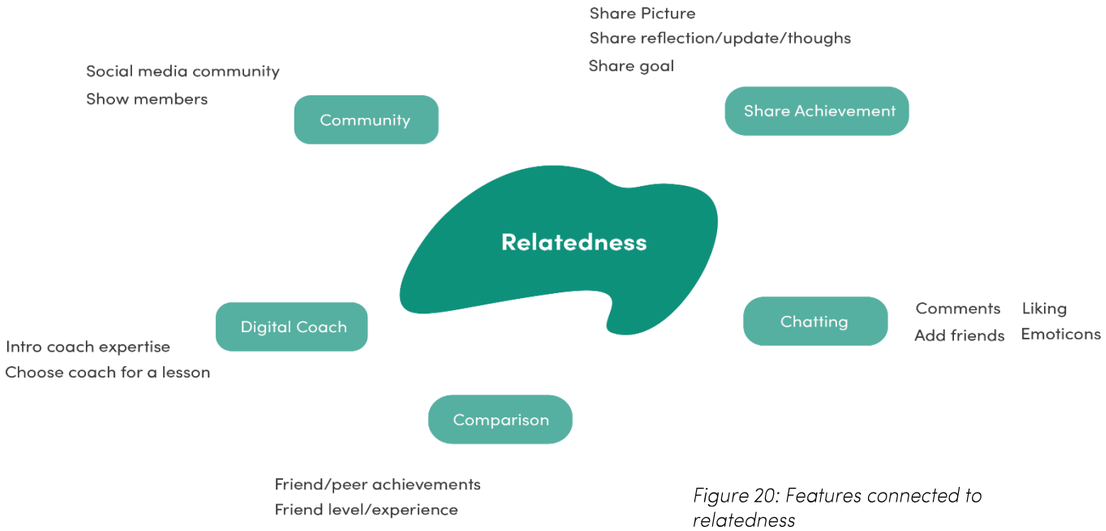


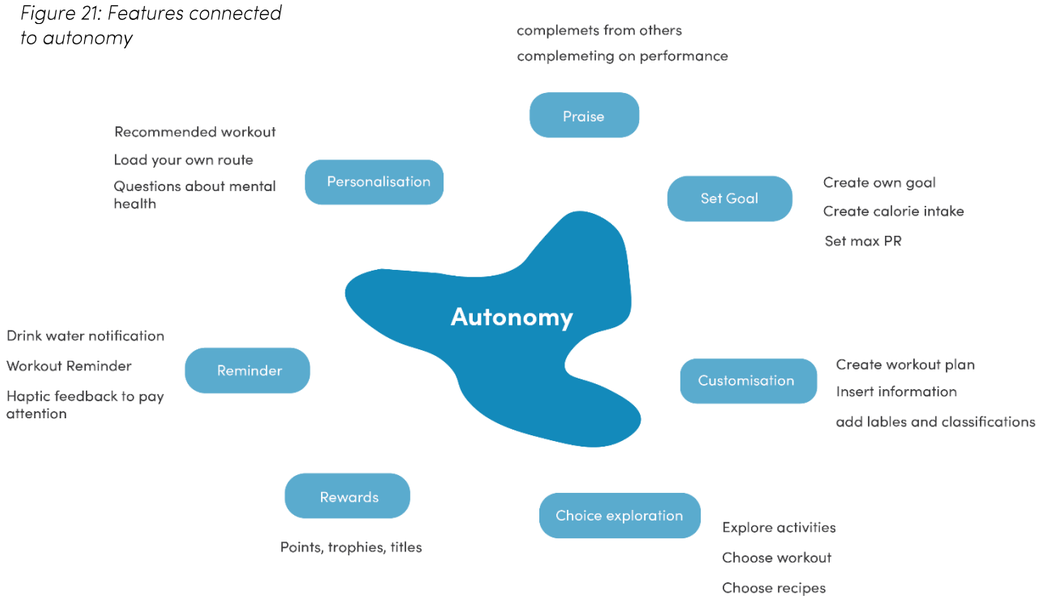
Figure 20: Features connected to relatedness

Peer comparison is mostly related to competition, but it does not have to be so. When competing with someone users mostly compare them with their friends or peers. This could be done through a level system or by simply looking at how many points a peer has compared to yourself. In a non-competing environment, users can simply see the achievements or processes of others and can see what they have achieved in comparison to themselves. Based on this comparison users can get inspiration from others and see which topics are popular and which are less.

Digital coach is simply having a video lesson or audio session with a coach and getting to know the person. By introducing a coach the bond between the user and the coach can grow and users get more engaged with the app. Although a digital coach can be beneficial, most apps do not make use of this feature. This can be since having a personal coach or frequent video lessons with a coach can be rather expensive for the app.

Praise is coloured both green and blue which means it can cover relatedness as well as autonomy. The reason why it could boost relatedness is that other users of the program can complement each other on their achievements. This can increase friendships and gives a feeling that other people see and care about you. Furthermore, it can boost autonomy levels. People love to be praised and by getting praised on work or achievements users tend to feel inclined to keep doing them. In this way, the user's goals are more fluently achieved which correlated back to autonomy.

Figure 21: Features connected to autonomy



Autonomy

When looking at autonomy it is important that users feel independent and in control over the situation. When an app is using personalisation, it will adjust its preferences to a specific user. One example is already asking a participant what their age, gender, weight and length are. This is done by making a recommended schedule for a user that would work best for them. *Carbon* is making use of this and also allows users to connect with smart wearables such as Fitbit to calculate how many calories were burned during a walk. Based on this information it changes the users' schedule again and makes a personal schedule that would fit one specific user. Personalisation is a tool which is used widely in apps and increases a sense of ownership and control when using the app.

Customisation looks similar to personalisation but is quite different. With customisation users are free to change their workouts or training, for example, Headspace allows users to make the time of a mindfulness session shorter or let users create their playlists. This gives users the control to make training more flexible but is not a personal change for a specific user. Many apps implement customisation elements into their app so that users can interact more easily through the app or feel more at home.

Setting a goal is mostly done in the onboarding process. This can be done by asking the user a direct open question about what they want to achieve, or by giving them several options to choose from. By giving users the freedom to choose what they want to achieve with the app guidance and autonomy levels are boosted.

Reminders help users in their training to stick to the program and to achieve their goals. Adding reminders helps users to stay organized and keep track of their process. SDT considers that self-organization is a natural effort and that it occurs under autonomy (Villalobos-Zúñiga, G,. 2020). However, excessive use of reminders can lead to annoyance of the app and causes users to delete the app. Therefore, most apps give users the freedom to enable or disable push notifications.

Choice exploration is giving the user a wide set of options such as training exercises, video lessons or recipes to choose from. The user does not feel limitless in the options that the app has to offer. When users do feel limited, they feel that tasks are slightly obligated which causes that the tasks become less attractive. Again giving the user a sense of ownership by letting them choose their own workout or routine increases autonomy.

Reward is coloured both blue and purple which means it fits in autonomy as well as competence. As discussed before, rewards can be intrinsically rewarding but most likely are labelled as extrinsic motivators. Therefore, placing rewards in a strict category as autonomy or competence should be taken lightly. However, when the user is not yet intrinsically motivated to participate in a certain activity or task. For example, when a student gets graded for a test, they are more likely to study to get a good grade rather than learn to become better for themselves. This can come off as controlling which would hinder autonomy. However, intangible rewards (rewards with no material or monetary value (Madhani, P. M., 2021)), such as badges, achievements or titles could foster pride or mastery over a skill and makes them feel more confident in the activity which stimulates competence (Niemiec, C. P., 2009).

Competence

When looking at competence it is important a user feels confident and effective in the activity they participate in. As discussed before, challenges are a great tool to boost competence. When a design offers enough challenge, the user gets engaged with the app and tries as hard as possible to beat that challenge. When this challenge is won, it gives the user a dopamine boost and feels more confident about their skills that are needed to interact with the challenges.

Performance tracking provides the user to track their process so far. DrinkWater does this by showing how many glasses of water a user has to drink over time and how many are needed to achieve their goal. Whenever a user looks at their performance it gives a sense of pride and confirmation of how they performed during the activity and most importantly that they finished the activities. According to E. Deci (2012) self-reporting is associated with intrinsic motivation and boosts competence.

Level advancement is a way to let users feel more confident in the app. By gaining levels in the app the users feel that they perform better. Giving them levels and titles users gain a certain mastery over the app. This is a game element that is often used to make the app more fun and to stimulate users to participate more in the app to gain a higher level.

Feedback gives the user information on how well they performed during an activity and what could be done better or differently. By showing the users their growth and learning curve it can enhance competence. However, when feedback becomes meaningless or too negative it can have negative effects. When users would underachieve, they would not change their behaviour and would use coping mechanisms such as, neglecting the feedback or procrastinating tasks (Sjöklint, M., 2015).

By providing live tracking features, for example, showing the time a person has walked so far in the app *Ommetje* or showing the live GPS location of a person's running in the *Map my Run* app people get immediate feedback. This shows that the user is participating in the current activity and with the tracking going up (higher distance or time) the person gets motivated to move on and stimulates feelings of competence.

Many well-being apps make use of awareness elements to show the importance of the app. This is done by showing the benefits of certain tasks or success stories. By giving a user a better sense of the relevance of the activity users participates more confidently and effectively in a task.

Reflection gives users a moment to look back on their performance. Users get the chance to look back at why they engaged in a task in the first place and what goals they have achieved. By gaining new insights about previous tasks and themselves users could adapt their workout to make it more effective thus increasing competence.

Although competition could be done with yourself for example, beating your high score again and again, it is mostly done with other users of the same program who participate in the same activity. As discussed before competition could fit within competence and relatedness and it is important to keep in mind that not all features are strictly bound to their category. In order to compete, apps often make use of leader boards or ranking systems. By competing with other players, users can experience a sense of connectedness which refers back to relatedness. The competition feature was used less of all features (together with digital coach). This can be since most of these apps focus on nutrition or mindfulness which is most of the time an individual process. Adding competition elements could lead to unnecessary insecurities or stress which would be counter-productive.

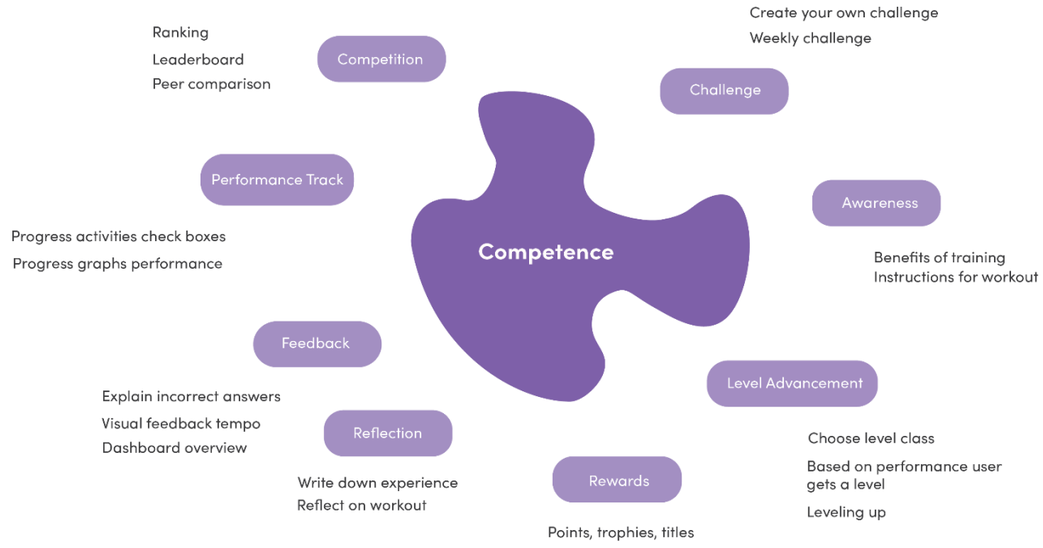


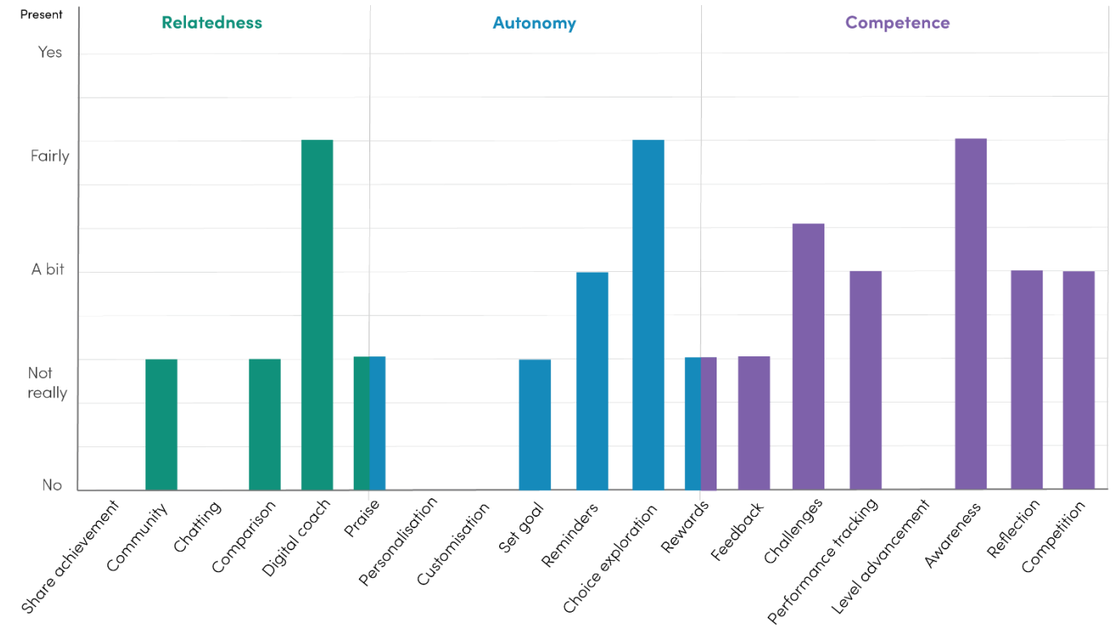
Figure 22: Features connected to competence

App comparison

When looking at the Recharge app we see that most features are present. However, not all of them are executed as well as they should be or could use some improvements. Based on the previous analysis we looked at how well Recharge fit in these models. In figure 23 the Recharge app is placed in a bar chart and on the graph below the bar chart of the 10 motivational apps is presented. The bar chart of the app analyses was shown before and shows the feature coverage of the app. The Recharge bar chart shows the features concerning how strong they appear in the app. The goal of this analysis is not to simply add all SDT features to create a better app. However, designers should think about which features would be a beneficial part to add to the app to stimulate motivation. In this case, it is best to see which features Recharge is lacking the most.

When comparing the app analyses chart with the Recharge bar chart we see that the Recharge app scores decent on digital coaching, choice exploration and providing awareness on well-being, but could use some improvements on personalisation and customisation which is lacking. Furthermore, in comparison to other motivational apps Recharge could score higher on providing feedback, setting goals and social features such as sharing achievements, community and chatting. This can be a lot to successfully implement in the Recharge app. Therefore, we looked which features are most relevant to tackle first.

The survey results that were previously mentioned showed that users liked to maintain an app if guidance, feelings of reaching a goal and performance track were implemented. Furthermore, personalisation and choice exploration were features users missed and would like to see back in the app. To get a more precise answer to see which features are most relevant an interview with the Recharge target group was conducted and will be discussed in the next chapter



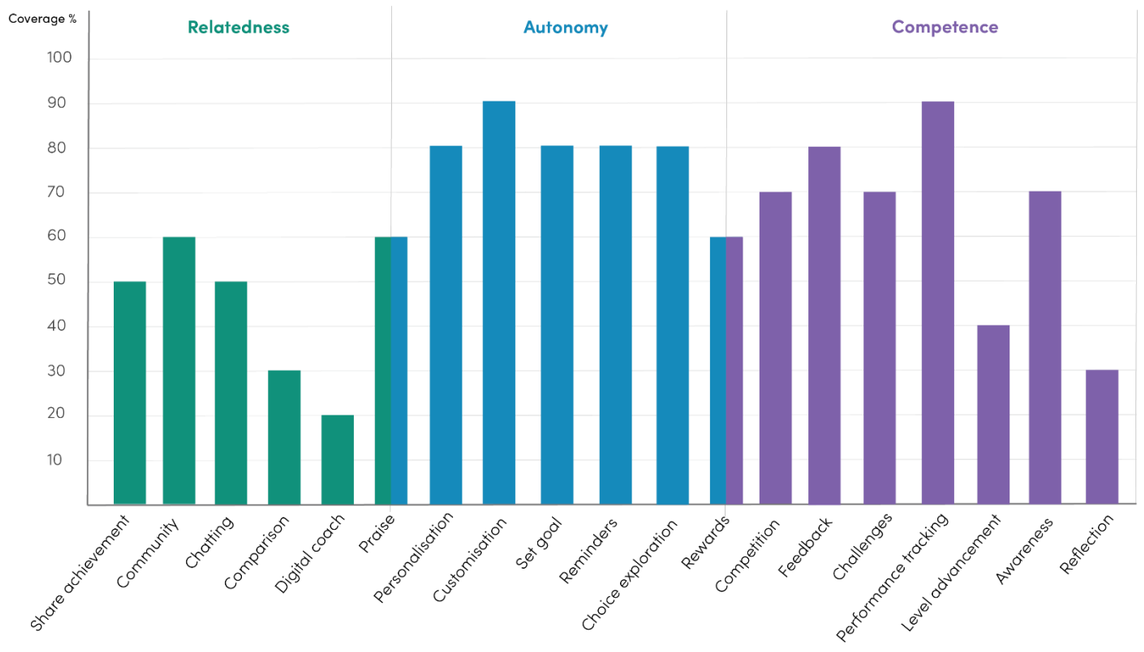


Figure 23: Thematic analysis comparison of Recharge and motivational apps

Conclusion app analysis

Based on the app comparison we make three conclusions based on the three SDT values.

For relatedness, we see that elements of coaching and comparison are added. However, adding friends and a sense of community is lacking and could be improved, for example creating a strong bond with colleagues. Sharing achievements and chatting could be great tools to boost the community feeling. At last, adding more praise should occur to make the user feel more at ease.

For autonomy, the app offers enough choice exploration by providing recipes, videos and daily tasks. However, reminders were not operating that well. Later the company explained that this was due to a technical error. Therefore, this can be neglected. Furthermore, setting a goal could be more expanded in the onboarding process and rewards could be used more often. Lastly, personalisation and customisation could be improved. Adding more personalisation elements and a more personalized program for its wide target group would be recommended highly.

For competence, there is a good amount of scientific information and the importance of all activities is clearly described. However, more accurate feedback and performance tracking activities could be added to improve the user's journey. Although the Recharge app is working on providing more challenges. It would be recommended to try out more variations of challenges. Instead of to-do challenges, other challenges such as weekly or daily challenges could be helpful to incorporate especially when these are linked to a daily or weekly reward. Level advancement is not really in there. However, when a program is more personalized it is perhaps not needed to add that in. Furthermore, live tracking is not included as well. Small live tracking elements could be added but can be optional due to the fact it is not that relevant for Recharge.

03
DEFINE

In this chapter information can be found on

1. Interviews
2. Clusters
3. Design insights
4. Design direction
5. Design vision

3. DEFINING INSIGHTS

In this chapter the data that is gathered was enriched by doing user interviews. More information about the target group was collected in order to spot relevant insights. These insights were clustered and were followed by several design statement. Furthermore, a design direction and vision were formulated based on the interview insights, literature study and app analysis.

3.1 Interviews

To design an experience that motivates more users of the Recharge app it is important to get to know them better. Therefore, interviews were conducted in order to see what their daily obstacles are and what they like and dislike about the app.

Methodology

The goal of the interviews was to find out what the user's wants and needs were. In total 15 participants were interviewed between the age of 23 and 55 years old. The majority (12 participants) were female and only three were male. Each interview would take around 30 minutes. These interviews were conducted accompanied by Randy Hereman who works at the Recharge Company. In order to get insightful results a list of questionnaires was prepared (see appendix 1).

Due to the Covid situation, it was difficult to reach the target group. It was not possible to meet with them physically so all meetings were conducted online through a zoom meeting. Furthermore, the schedules of employees and managers were pretty tight. Due to their high workload, it took some time to reach the target group. At first, we sent out e-mail invites, but not many people responded. Luckily, the month that we needed the interviews another Recharge pulse started. Here many people participated in and were using the app. After the 5-day Bootcamp we asked users again to participate in an interview. This time a reward (the book 'work smart, play smart from Hidde) was delivered if people would participate in the interview.

With the Recharge experience fresh in mind 15 people reached out to us. Within these 15 users, 4 of them were HR managers or owners and 11 of them were users. Besides, three HR managers and owners used the app and therefore could be labelled as user as well. There were made two separate interviews. One interview for the Recharge user and one interview for the HR managers or owner of the company (the client). Both interviews had it separate goals.

Goal Recharge users

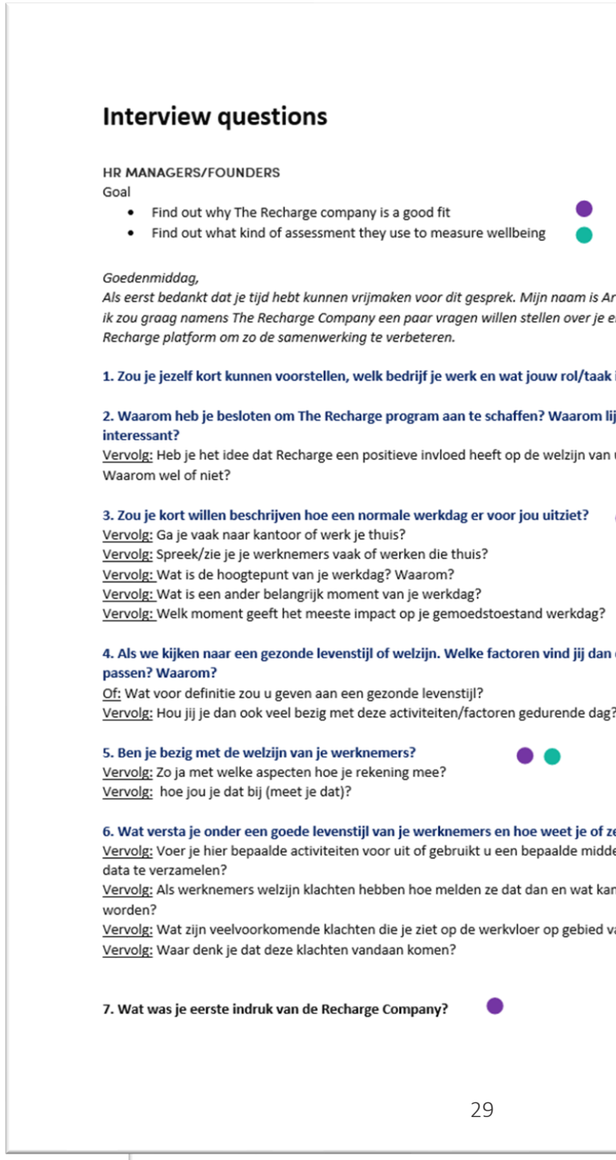
- Find out what the problem is of users and why they stop using the app. (what are the pitfalls that keep them from achieving their goals?).
- Find out what they want to achieve and how they think Recharge will play a role in order to achieve it (expectations).
- Find out what the Recharge app is lacking and what is needed in order to satisfy the users.

Goal HR managers & owners

- Find out why The Recharge company is a good fit.
- Find out what kind of assessment they use to measure well-being.

Note: The interviews were only conducted with people who use the app and not with people who have access to the app but did not want to use it.

Together with Willem van der Maden the questions were set up. During the interview, all sessions were recorded to watch back later on. The questions started by asking what their regular day would look like. By going through their daily activities, we would ask to follow up questions to really understand where the problems were. Furthermore, questions were asked about how they would describe well-being and what it meant for them. In this way, we could understand what they found important and what they wanted to change or improve about themselves. Lastly, we asked them about their experience with the Recharge program. Where we ended the interview with the question of what they think would be a great addition that should be incorporated within the app. The interview question can be found in appendix 1.



Interview questions

HR MANAGERS/FOUNDERS
Goal
- Find out why The Recharge company is a good fit
- Find out what kind of assessment they use to measure wellbeing

Goedenmiddag,
Als eerst bedankt dat je tijd hebt kunnen vrijmaken voor dit gesprek. Mijn naam is Ar
ik zou graag namens The Recharge Company een paar vragen willen stellen over je e
Recharge platform om zo de samenwerking te verbeteren.

1. Zou je jezelf kort kunnen voorstellen, welk bedrijf je werk en wat jouw rol/taak

2. Waarom heb je besloten om The Recharge program aan te schaffen? Waarom lij
interessant?
Vervolg: Heb je het idee dat Recharge een positieve invloed heeft op de welzijn van
Waarom wel of niet?

3. Zou je kort willen beschrijven hoe een normale werkdag er voor jou uitziet?
Vervolg: Ga je vaak naar kantoor of werk je thuis?
Vervolg: Spreek/zie je je werknemers vaak of werken die thuis?
Vervolg: Wat is de hoogtepunt van je werkdag? Waarom?
Vervolg: Wat is een ander belangrijk moment van je werkdag?
Vervolg: Welk moment geeft het meeste impact op je gemoedstoestand werkdag?

4. Als we kijken naar een gezonde levenstijl of welzijn. Welke factoren vind jij dan
passen? Waarom?
Of: Wat voor definitie zou u geven aan een gezonde levenstijl?
Vervolg: Hou jij je dan ook veel bezig met deze activiteiten/factoren gedurende dag?

5. Ben je bezig met de welzijn van je werknemers?
Vervolg: Zo ja met welke aspecten hoe je rekening mee?
Vervolg: hoe jou je dat bij (meet je dat)?

6. Wat versta je onder een goede levenstijl van je werknemers en hoe weet je of ze
Vervolg: Voer je hier bepaalde activiteiten voor uit of gebruikt u een bepaalde midde
data te verzamelen?
Vervolg: Als werknemers welzijn klachten hebben hoe melden ze dat dan en wat kan
worden?
Vervolg: Wat zijn veelvoorkomende klachten die je ziet op de werkvloer op gebied v
Vervolg: Waar denk je dat deze klachten vandaan komen?

7. Wat was je eerste indruk van de Recharge Company?

Target group

In figure 22 all participants that conducted the interview are shown. Because most interviewees wanted to stay anonymous, we decided to place a marker in front of their faces. However, many characteristics of the participants are still shown to get a grip of the target group. The target group varied from 28- to 55-year-old people. Most of them were female around the age of 45. Furthermore, these were people from different companies and regions. Most people that were interviewed were Dutch, but some people lived in the UK or Germany. In the paragraph below we will shortly introduce some of the participants.

Jochem

Jochem is the owner of his wine store. He likes the program very much especially because it shows the scientific information about why certain tasks are relevant. Ideally, he would like to buy the Recharge program, but because he has a small company with a changing staff, he can't obligate colleagues to use the app. He believes that improving well-being will lead to a good mood which is important to sell products in the store.

Owner

Wine store

At the store

Patricia

Patricia mostly uses the app during the weekends due to problems with time management and high workloads. The reason that she wanted to try the program out is that she noticed she had difficulty obtaining a clear mind during the break. Her goal like she said herself: ''I want to hear the birds chirp again''

User

Unilever

At home

Juergen

Juergen really likes the team aspect of Recharge. He formed a team with some colleagues and won with his team as well. However, he got some points. He would like to see a clearer link between the app and the workshops that are provided. Furthermore, he noticed that the interaction with the checkboxes feel a bit empty and repetitive. He recommended that it could be improved with some nice visuals or clear overviews.

User

Omron manager

At home/office

Noreen

Noreen is a PhD student who is researching well-being and nutrition. She tried it out because due to Covid most people have to work from home instead of at the office or University. She had difficulty making this switch which causes that she made longer work hours and skipped certain meals. Therefore, she wanted to change her routine. Overall, she liked the exercises and recipes. However, she would like to see more diversity within the app.

User

PhD well-being

At home

Sjoukje

Sjoukje already exercises a lot in her free time and is very athletic. However, due to remote working, she noticed that 70% of the day she sits behind a screen. Because she misses her Recharge moments she started with the app. The app was for her too general. Most things she knew, and the information (such as nutrition value) were more targeted for males than females (800kcal in a meal with 80g carbs was way too much for her). She would like to see a more personal program.

User

Deloitte

At home

Corrine

Corrine is the HR well-being manager of Unilever. Her day is never the same which causes that planning a Recharge session can be difficult the day before. She works as well on improving the well-being of her fellow employees. She noticed that most employees acknowledge the problem of well-being, but simply don't prioritize it. Therefore, she needs someone like a drill sergeant who gives the order and people start doing it without hesitating. This will guide employees

HR manager

Unilever

At home

Anne

Anne has the feeling that life flies by too quickly. She now works at home and has difficulty with this as well. It is hard staying professional when every time your kids can run across the room. Due to being a full-time mom and employee, she does not have the time to work out or eat healthy. Small tasks to maintain fit would be ideal for her. Furthermore, because she sits all day behind her screen she wants to look less at screens if it is unnecessary.

User

Unilever

At home

Susan

Susan did the Recharge program 4 times already and likes it a lot. It gives her structure and gives her moments to focus and reflect on herself. She likes to use the app on her own and is not fond of sharing her results or being part of a team. However, she had difficulty managing her time to prioritize her well-being as well. Therefore, she prefers the shorter tasks in the app and likes to have the freedom to choose from a big list of activities.

User

Manager Kings Hill

Office

3.2 Mind map

After conducting the interviews, a mind map was created in Miro. Within this mind map a picture of the interviewers was placed with quotes or relevant information around them which gained insights during the interview (see figure 24). In the figure, there are green, red and blue post-its shown which will be explained

- The blue post-it cards were general information about a person, for example where they worked, what their function is or what they like to do in general (hobbies, activities etc.).
- The green post-it cards were comments about the app or program that users liked or would like to see more often. Furthermore, these were also topics users liked doing during the day, for example walking the dog or chitchatting with colleagues at the coffee machine.
- The red postcards were topics that the app was lacking or could be improved. Furthermore, other daily obstacles or problems were written down as well.

Based on these postcards clusters were made. Many times there was overlap in the problems and daily obstacles the interviewees had. These were written down on the postcard itself to spot them more easily when the clustering process would start. In figure 24 at the bottom picture, the mind map stays the same only the colours changes.

- The black postcards are information that was not interesting or relevant for the clustering process and was left out
- The yellow postcards were all quotes and information that was interesting and were taken into account during the clustering process.

Lastly, to keep track on who said what during the clustering process all participants were assigned a unique colour (see figure 25). In this way, an overlap between people who have the same opinion or mindset can be spotted more easily. Perhaps managers experience different problems than their employees.

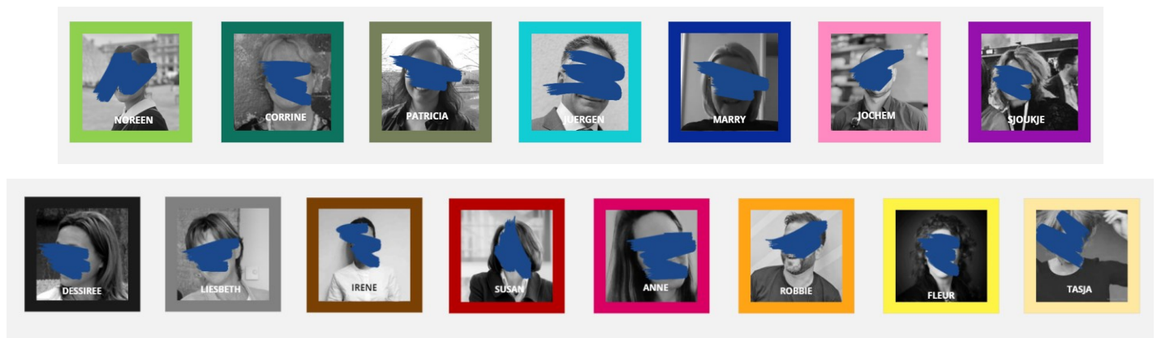


Figure 25: Participants with their own colour

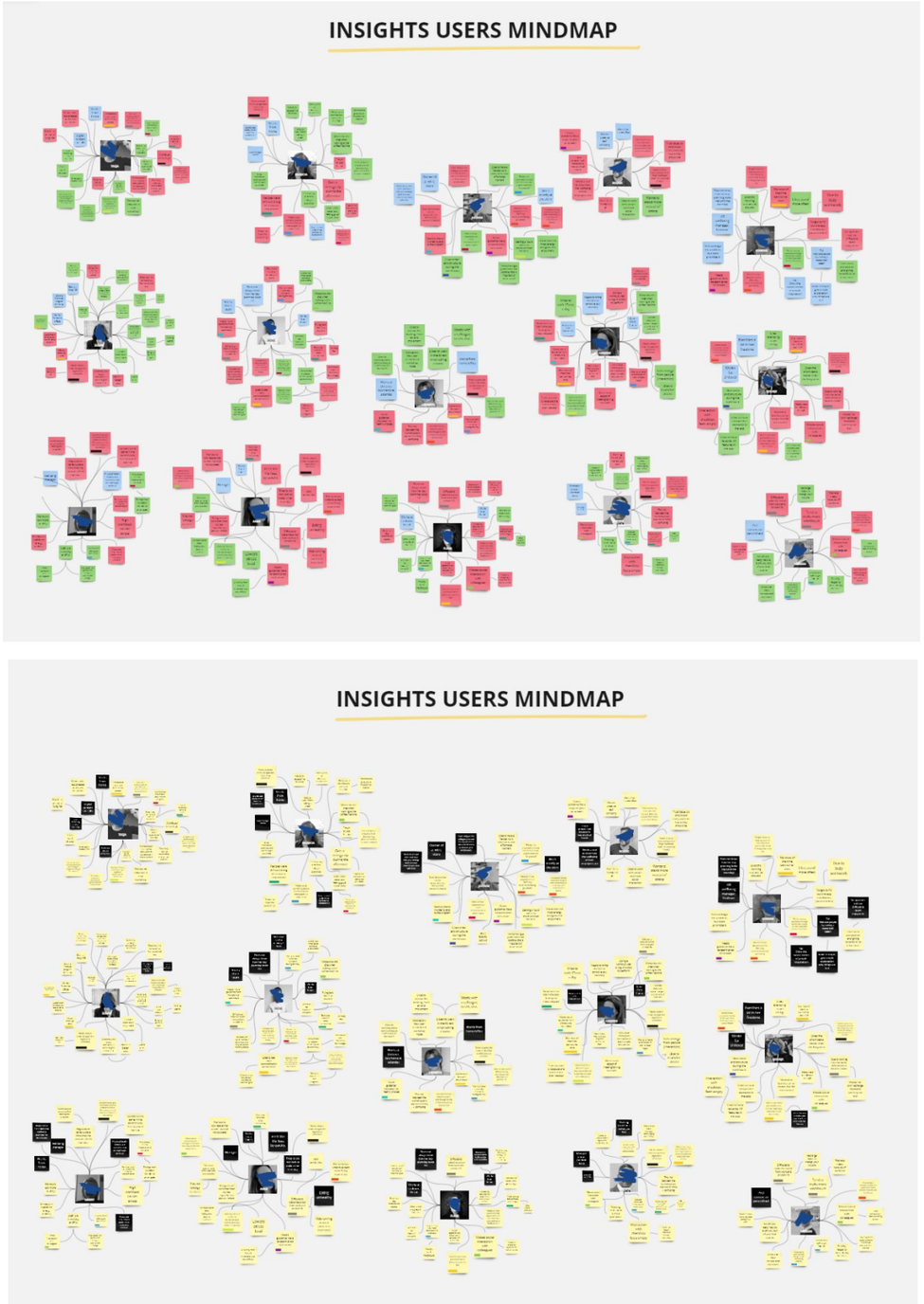


Figure 24: Insights user mind map

INSIGHTS CLUSTERS

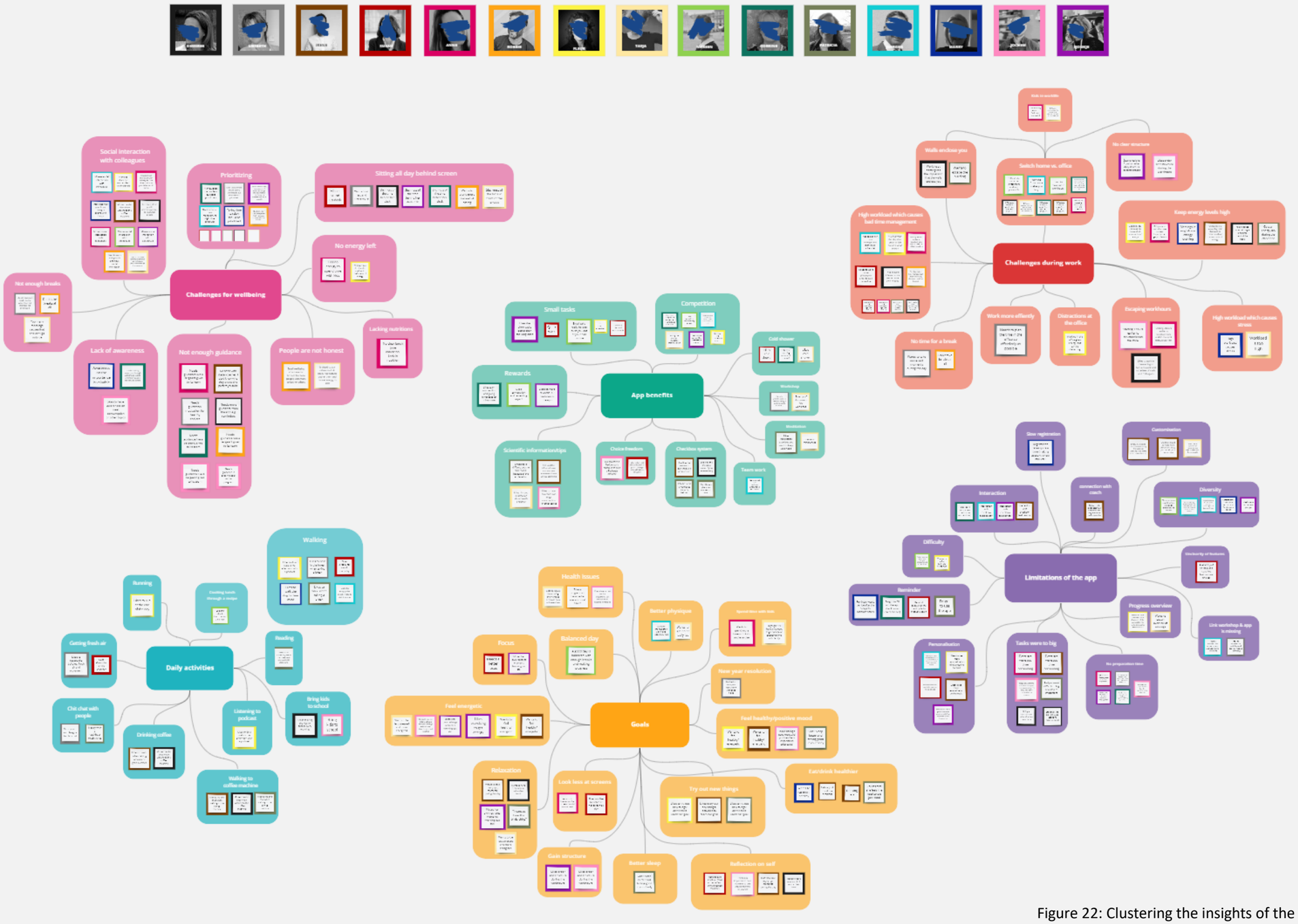


Figure 22: Clustering the insights of the interviews. Clusters can be found in the link below
https://miro.com/app/board/uXjVOP-9_7s=/

Results

Based on the interview results the clusters were made. In total six clusters were made. These six clusters are user's goals, challenges for well-being, challenges during work, daily activities, app benefits and app limitations. All these six clusters will shortly be introduced in the paragraphs below.

Cluster 1: Goals

One of the main questions was what users wanted to achieve with the Recharge app or simply in general when looking at well-being. When looking at the figure 26 there can be found a big variety of users' goals. Some of these goals are more common such as feeling more energetic, trying to relax more or simply getting in a good mood. Others are less common such as creating a better physique, having health issues or having the urge to try out new things and break that daily repetitive cycle. Every user has their own Recharge journey with their own goals. Writing down their goals is already a good start to understand and reflect on what is needed to improve well-being. By creating a more personal app users can focus to achieve their own goals better. More diversity in the content of the app would be necessary to get the information about how to tackle a certain goal.

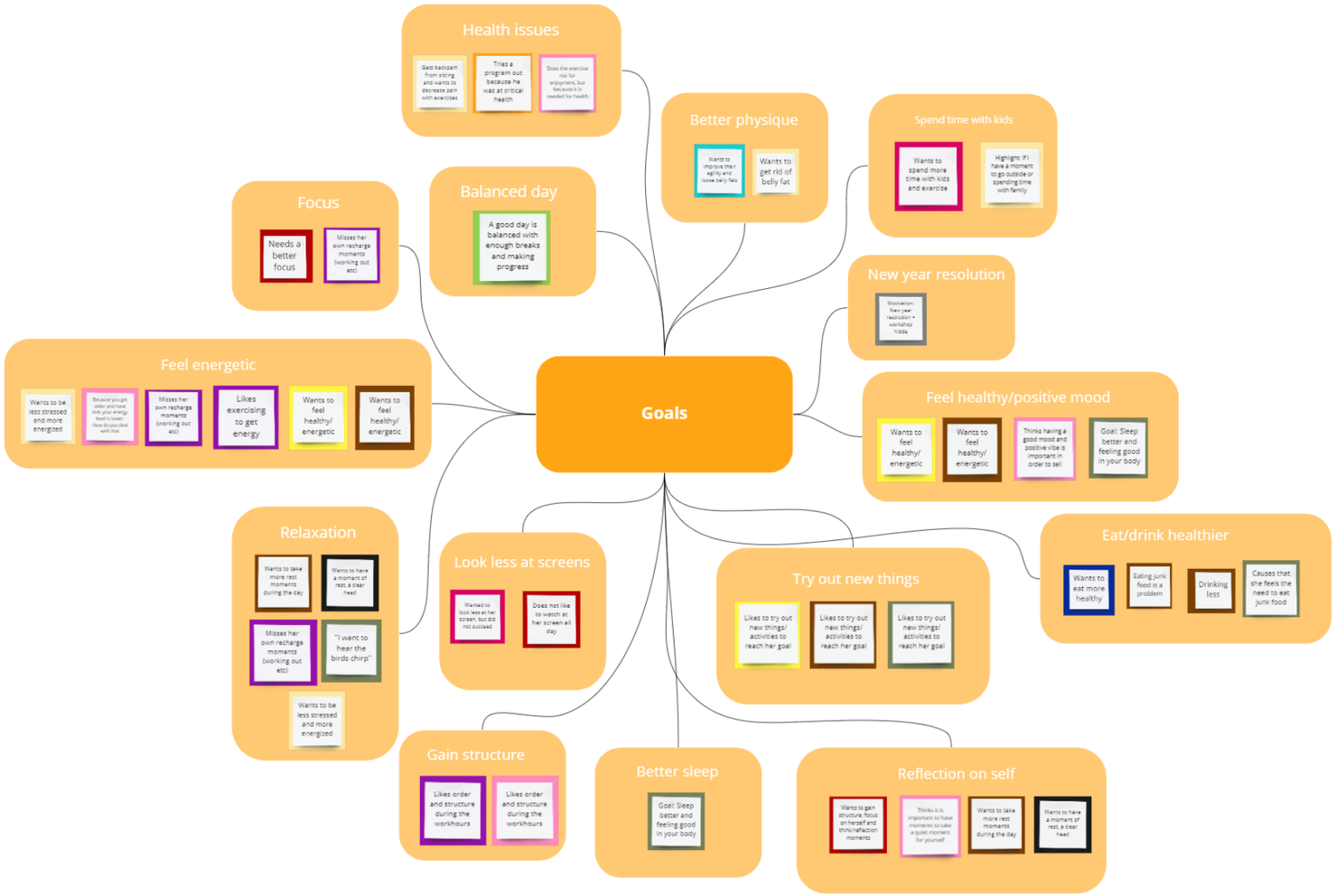


Figure 26: Goals cluster based on interviews

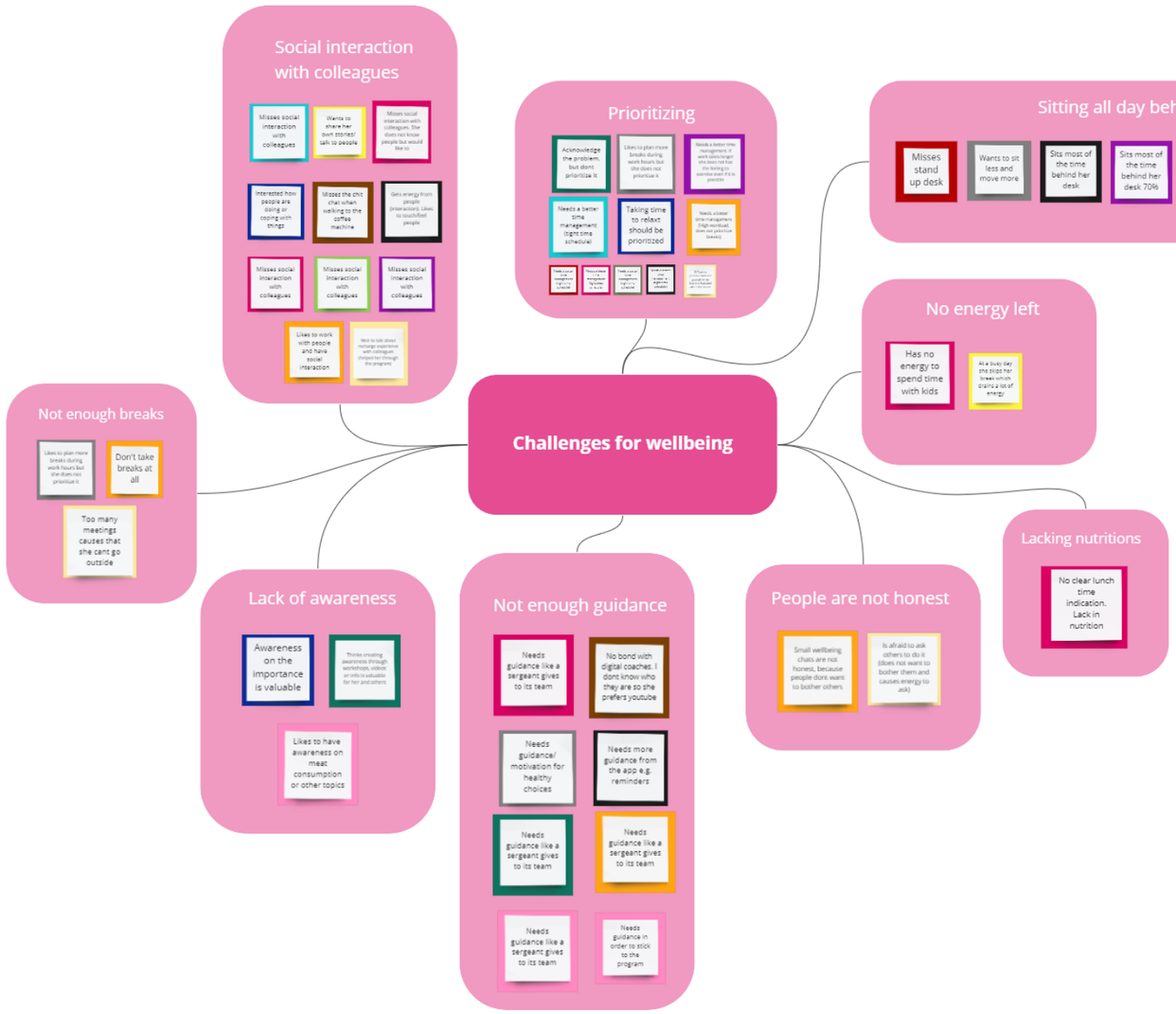


Figure 27: challenges for well-being cluster based on interviews

Cluster 2: Challenges for wellbeing

Health-related questions were asked as well such as, questions about what well-being meant and if people lived a healthy lifestyle or not. Most people were not satisfied with their current lifestyle. This was mostly caused due to work which demanded sitting behind desktops for a long period of time.

Furthermore, almost all users that needed to work from home due to the Covid pandemic indicated that they missed social interactions with their colleagues. Most social interactions are now through Google teams or Zoom. However, participants said that these conversations stayed mostly business-like and impersonal. Small chitchat that was not work-related was not discussed. This is because most chitchats normally occurred more spontaneous, for example in the hallway or around the coffee machine.

Moreover, participants did not feel the urge to prioritize well-being. Making room for well-being activities is placed at the bottom of the daily activities to-do list. This can be explained by the fact that there is no strong importance for awareness of wellbeing. Most people already know about the risks of their lifestyle, but showing the benefits of well-being could trigger people to place it higher on their schedule. Recharge focus lies for a big part in how well-being can increase focus and concentration to be more productive and increase work efficiency.

Lastly, users simply do not know where or how to start improving their well-being. Therefore, more guidance for these users is needed. Users who do start, feel a lack of guidance during the app and eventually stop using it. This can explain why the drop off of first-time users is high.

Cluster 3: Challenges during work

Now that challenges for wellbeing are tackled, we have a look at challenges during work. Here most participants complain about the high workload which drains all their energy during the day and causes stress and time management issues. When we spoke to the participants, we noticed that this was a big deal for them and can be something difficult to overcome. We can't give them less work however, workshops about how to deal with time management or how to set your boundaries and say no could be beneficial for them. In the current situation, participants tend to escape work hours and work outside their normal 9 to 5 job. This causes them to not have time for other things such as maintaining their wellbeing. This can be a link between not prioritizing well-being which is discussed in the previous paragraph.

Furthermore, due to remote working people had a hard time making the switch between home and work. This is because participants tend to spend a lot of time in the same room which causes participants to feel like the walls enclose them and want to escape. This reinforces a lack of energy and causes people to lose structure in their daily life.

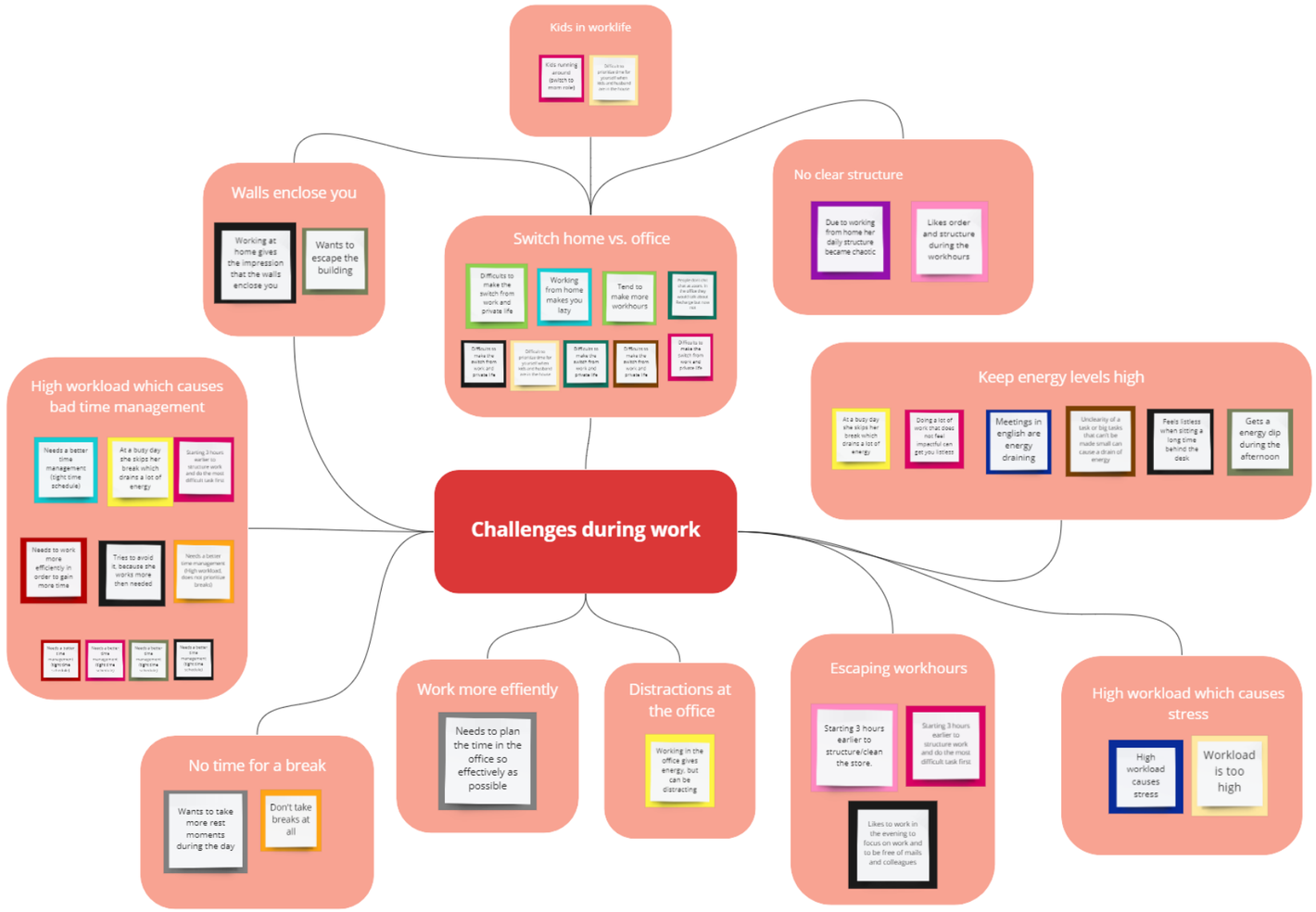


Figure 28: challenges during work cluster based on interviews

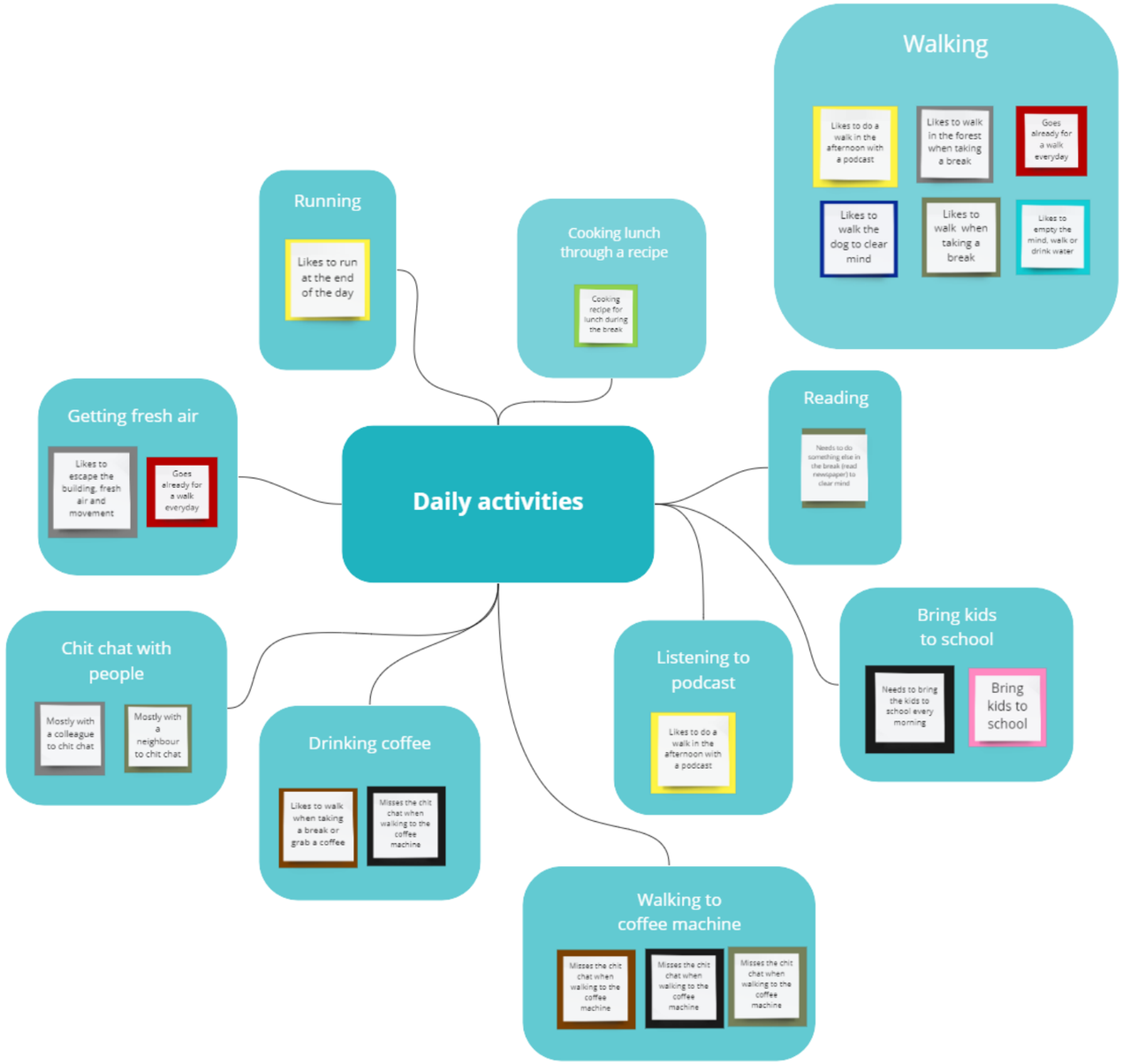


Figure 29: Daily activity cluster based on interviews

Cluster 4: Daily activities

When asking about their daily routines we asked the participants what kind of daily activities occur during the day, especially during the break from work. The outcome of these questions was for most participants the same and was related to movement. Walking or running were both popular activities. Simply getting out of the house and getting some fresh air was desired. All activities were centred on one goal which was to obtain a clear and empty mind where users wanted to place their thoughts somewhere else instead of work.

Furthermore, drinking coffee or walking to the coffee machine were also common answers. However, getting a caffeine boost was not the only reason for getting coffee. Most people missed the social part of it. The chitchat at the coffee machine, meeting new people or simply walking through the building to see people work. These small encounters were all things people like to do but can not be done now because of remote working. Most people have their coffee machine close by so the small breaks to stretch the legs have been discarded.

Cluster 5: App benefits

As said before, the majority of the people had a good experience with the Recharge app. Many people liked the scientific information about why a cold shower is important or why spending time on a mobile phone can interrupt sleeping patterns. Besides the scientific information, most people look up to Hidde, the founder of Recharge, and see him as a reliable source as well. The most popular features were the checkbox system and the smaller tasks.

The checkbox system was preferred because it gave the users a clear overview of what needed to be done on the day to improve their wellbeing. Furthermore, it was satisfying to check off a box which shows a kind of progress. This stimulated most participants to do the other tasks to check off as many tasks as possible.

Furthermore, the smaller tasks such as stopping snoozing or doing a quick stretching exercise in the morning were preferred. This is because they were not that time-consuming and felt like quick wins. Doing a small task and checking off a box felt nice. However, doing a 15-minute workout during the work break can feel a bit intense and needs more work to check off a box. People are still open about trying a workout or a new recipe. However, as discussed in the paragraph about challenges at work they simply lack time for those activities.

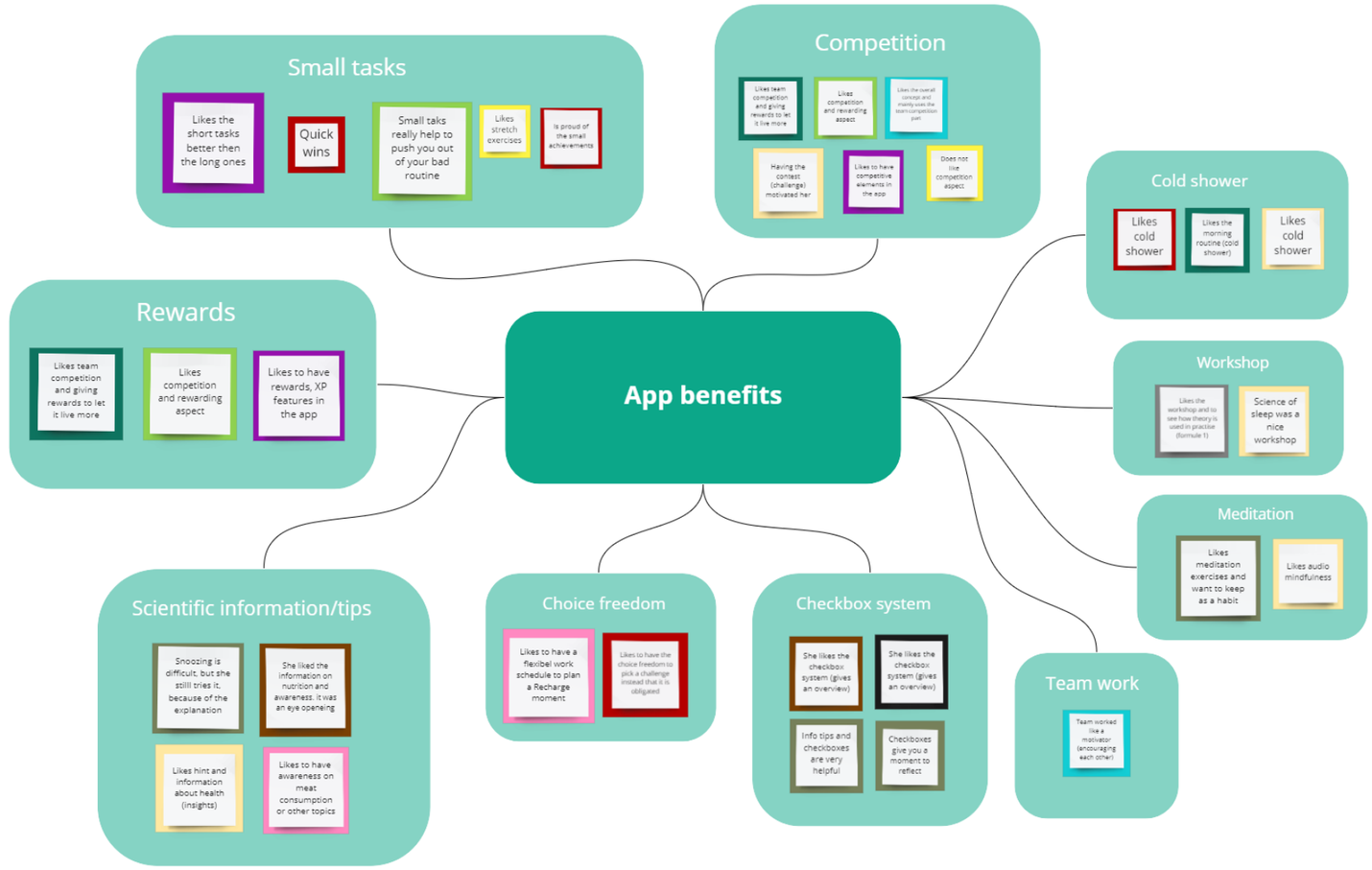


Figure 30: App benefits cluster based on interviews

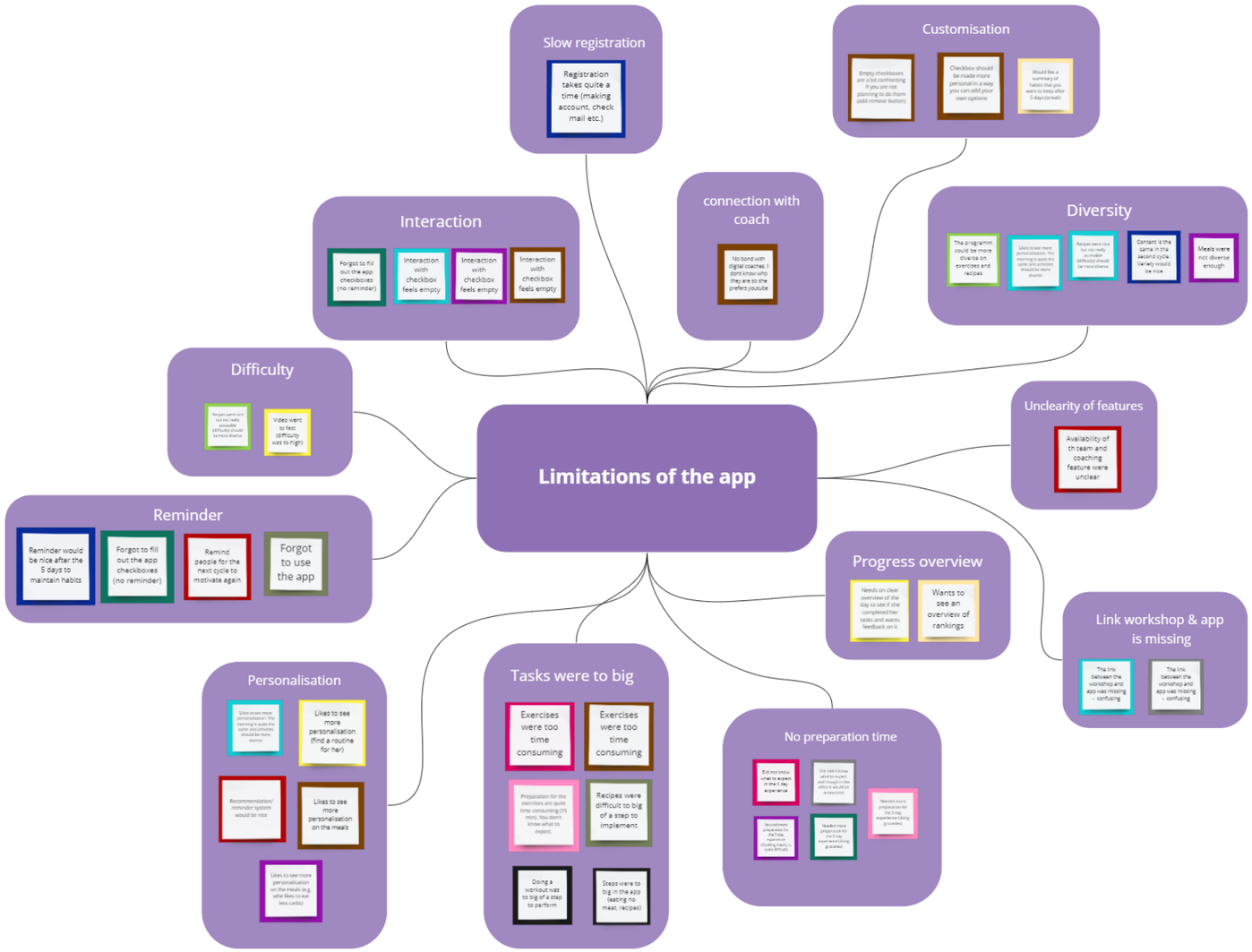


Figure 31: Limitations of the app cluster based on interviews

Cluster 6: App limitations

Besides having a good experience with the platform there are always some improvements that can be made. We already established that people liked the small tasks. Therefore, it came as no surprise that people thought that the other tasks felt too big. This was not only the 15 minutes of the workout video or 20 minutes of preparing a recipe. It was also the preparation time that was needed in order to complete these tasks. Changing outfits, taking a shower or doing groceries was time that was not taken into account for these tasks and therefore were labelled too time-consuming.

The checkbox system felt overall helpful. However, participants wanted to see it go to the next level. The root of the checkbox system feels good, but after checking off a box the interaction felt a bit empty. Furthermore, there is no strong need that stimulates you to check off these items. Improvement in the checkbox would be beneficial.

Some participants also forgot to use the app and would like to see some reminders. These reminders were implemented, but due to a technical error, it was not implemented correctly on android phones. This error is currently fixed.

Lastly, people would like to see more customisation and personalisation in the app. Routines are experienced as general for some and the tasks in the checkbox are now for every user in every pulse the same. Participants want to focus more on their own goals, for example, getting rid of belly fat. To achieve this, they want to choose between recipes with fewer calories. Recommendations system based on people's goals could be beneficial to guide users more properly.

3.3 Design insights

Now that the clusters are made it is possible to gather insights from them. Out of the six clusters, eight design statements were formulated. These statements will be described in the paragraphs below. The colours of the statements indicate which cluster they derive from.

1. The target group have activities in common, like walking, getting fresh air, talking with friends or colleagues, etc. **These common interests are all performed to get an empty head during the break. These moments can provide an opportunity for relaxation.**

2. The target group has a wide variety of common goals, but also specific ones. **By providing a check-in tool to make personal goals, users can focus and achieve them better.**

3. The most current challenges/tasks are labelled as too big, difficult and time-consuming (Recipes, workout, preparation). The smaller tasks were labelled as **"quick wins"** and pushed people out of their routines. **Adding more smaller tasks can be beneficial to stick to the program and kickstart habits.**

4. The experience with the checkbox system felt pleasant. However, the target group thought that the interaction with the checkbox felt empty as well. **A more meaningful interaction with the system would be beneficial where progress overview and customisation of the checkbox system is preferred.**

5. Due to remote working the line between private and working life has overlapped. This causes problems in time management which leads to stress, high workloads and a lack of energy during the day. **Making it easier for the target group to provide structure in their day and maintain energized which can help them improve their time management skills.**

6. The target group that works from home feel imprisoned in them. Most of the time they sit behind their desk and feel like the walls enclose them. **By stimulating movement in or outside the house, users can get the opportunity to clear their minds more effectively and reflect on themselves**

7. Due to remote working the target group desires more social interaction. **This allows Recharge the opportunity to expand their team and competition features more. Small social interactions in the app could also help to create feelings of connectedness.**

8. The target group acknowledge that wellbeing is important but does not prioritize it or are not comfortable talking about it. Furthermore, most users feel a lack of guidance when it comes to improving wellbeing. **More awareness of the importance of well-being should occur and should preferably be based on scientific research.**

3.4 Design direction & vision

Based on the literature study, app analyses and design statements a design direction and vision were formulated. Because not all design opportunities could be tackled, the most relevant and impactful ones will be chosen to create new design ideas. These were chosen based on how frequently the participants mentioned the problems and which relate most to the literature studies and analysis. The app analysis and literature study showed the importance of adding personalization, feedback and adding the right goal for the user to let the user feel confident to reach it. The interviews confirmed these insights and showed the value of adding more guidance, smaller tasks and prioritizing and reflecting on health. With the design direction and vision in mind design ideas and concepts will be brainstormed in the development phase.

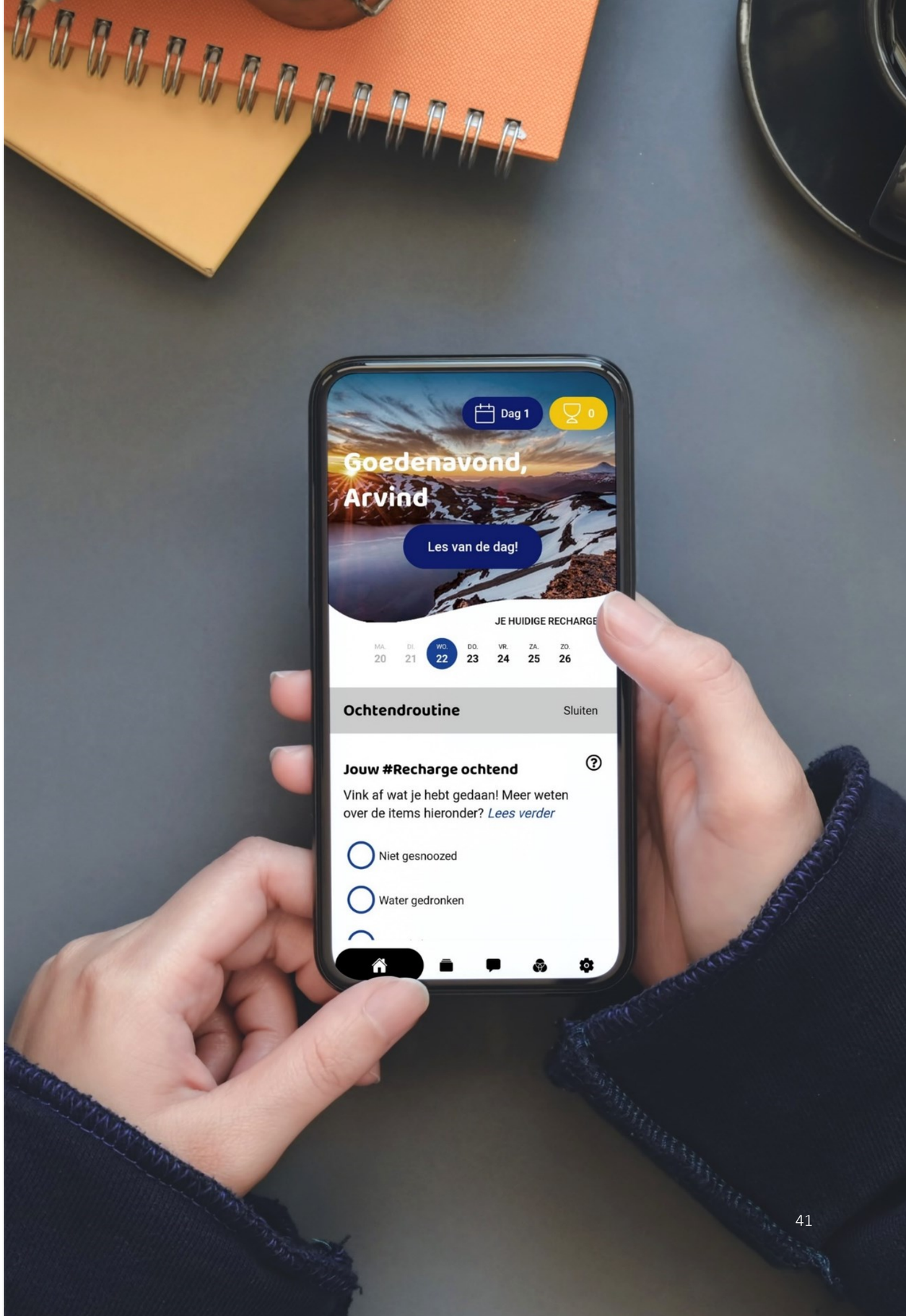
Design direction

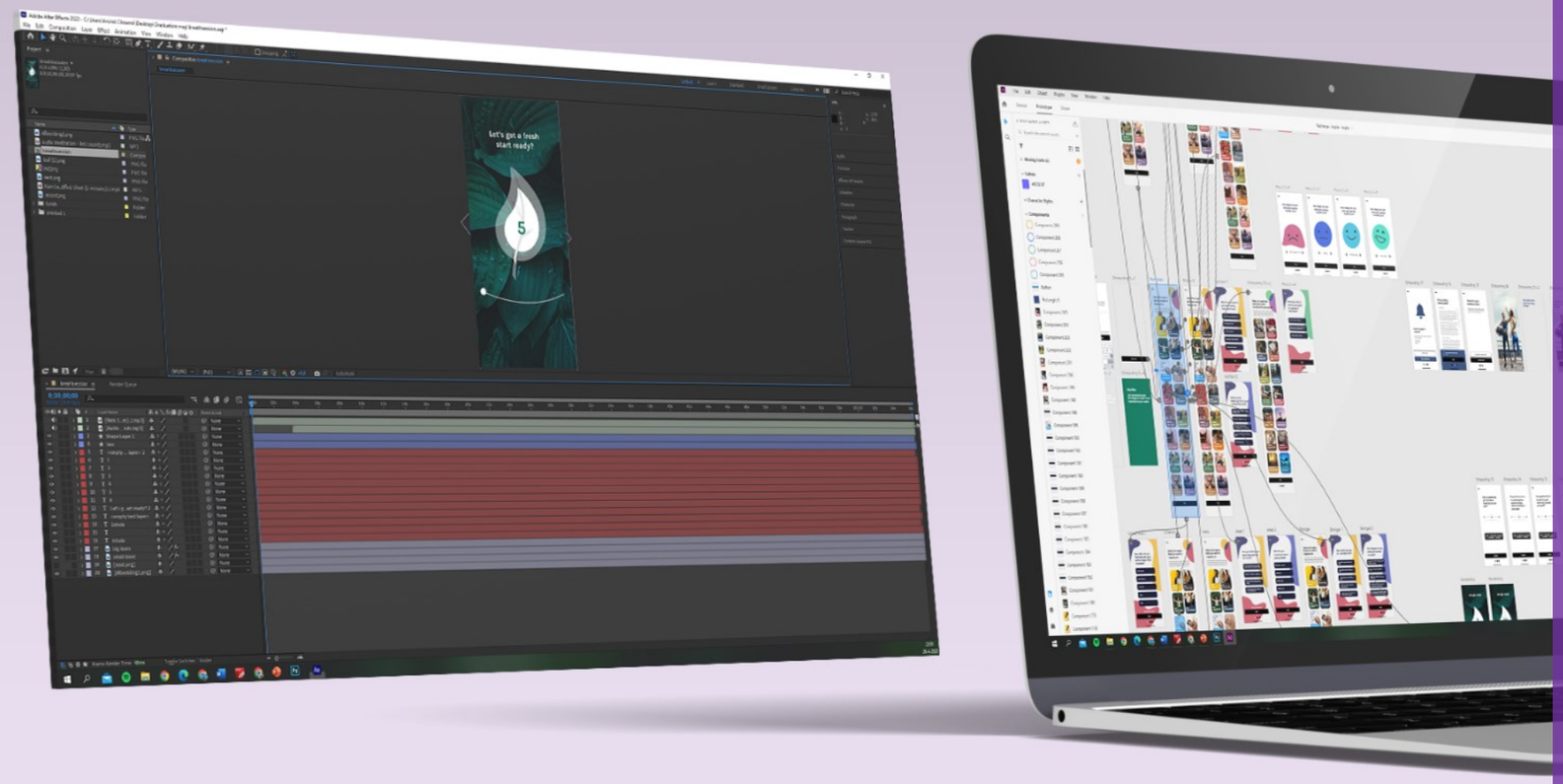
*"I want to design a more **personal** program that provides **meaningful interactions, relevant information** and **feedback to prioritize and guide** the user through the program.*

*Furthermore, the focus will be placed on **smaller tasks** that can easily be scheduled during work hours to **keep users energized or give space for reflection"***

Design vision

*"Users should feel **guided and engaged** with the app in order to stick to the program and **feel at ease and confident** during the day"*





04

DEVELOP

In this chapter information can be found on

1. Ideation
2. Iteration 1
3. Iteration 2
4. Pilot test
5. Test results

4. IDEATION

After formulating the design direction and vision design ideas were generated. In this phase design sketches, ideas, prototypes and user tests were formulated and conducted. These design ideas were created by doing brainstorming sessions, How-Tos, making iterations of previous ideas and analysing the company's style by making mood boards. Furthermore, previous insights such as the interview Miro mind map, customer canvas and current app designs were considered and were used as inspiring material for the process. After coming up with design ideas, prototypes were made in Adobe XD and Figma. With feedback from teachers, fellow students and the Recharge team a concept rolled out that eventually iterated to a final concept design.

To come up with design ideas a brainstorming session was conducted with four other students that follow a master's in design at the TU Delft. These students participated because they were conducting a similar study about motivation and engagement or just for the fun experience and help out.

First, we started with a brief pitch on what the graduation/course topic was about and what kind of insights we wanted to get out of the brainstorm session. After discussing everyone's topic and providing already some feedback and insights a set of questions were set up. These questions were based on the How-Tos method (where the questions starts with the phrase ''How to..'' and the designer comes with as many possible answers for the question). This was done to come up with as much material as possible instead of already specifying them and ruling out potential outcomes or inspiring material. The four questions that would act as the guiding direction of the session were:

- How to engage people?
- How to stimulate physical activity?
- How to add game elements to increase motivation?
- How to measure physical activity?

Note: for this research, the focus on physical activity is just an example to improve users' well-being and is considered as a subgoal instead of the main goal.

After creating these four themes everyone was allowed to place post-its on the board (see figure 32) and write down possible solutions. After collecting several interesting answers a brief discussion was held on each topic and possible design ideas were generated. This data was later used as inspiring material and some design ideas were created.

Figure 32: Brainstorm session with post-its

4.1 Design sketches

Based on the brainstorm sessions design ideas were visualized as can be seen in figure 33 and 34. These design ideas were improvements to specific parts of the app. For example, placing reflection moments in the afternoon or scheduling offline meditation sessions which an HR manager could keep track of (figure 33). Furthermore, screens for the app were drawn and new small features, such as customisation tools, well-being questionnaires and engagement activities were added.

Although the design direction and vision were already formulated in the chapter before, it was important to specify what specific parts needed to be changed. By simply creating many potential design ideas, many sub design directions were created which lay far apart from each other. For example, from creating more personal and meaningful interactions in the office to innovating users' digital agenda to prioritize well-being. Even though some ideas had potential the next step would be to pick an interesting design idea and iterate further from that point to create an achievable concept for the timeframe that is set. In order to select the most interesting ideas the designs were pitched to the Recharge team and the TU supervisors and based on their feedback ideas were changed, discarded or inspiration for new design ideas were generated.

Focus

Based on the discussion there were two design focus points created. The goal of the project is to motivate users to go through with the program and create feelings of engagement with the app. In order to achieve this, the app was divided into two stages. The first stage was to improve the onboarding experience and in the second stage, the checkbox system was adjusted.

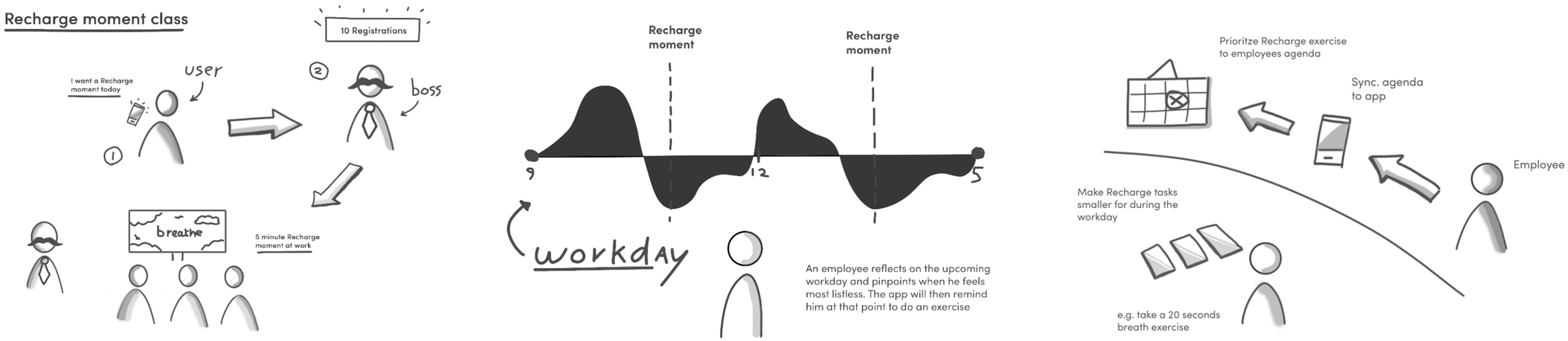


Figure 33: First design ideas sketches

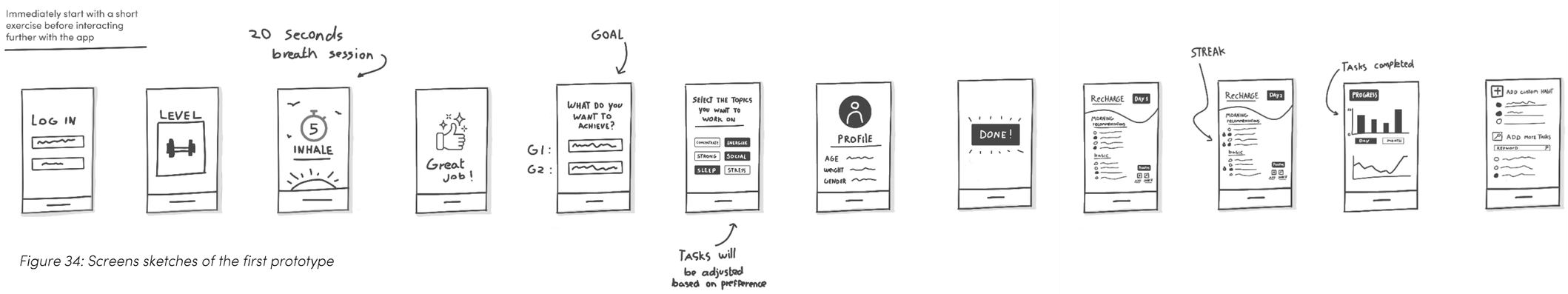


Figure 34: Screens sketches of the first prototype

4.2 ONBOARDING

When looking at the current onboarding stage it consists of planning the Recharge week, filling in a wellbeing survey (to measure the success later) and ends with a question that asks what the goal of the user is and what they would like to achieve (see figure 35).

When looking at these types of well-being questions we found that these questions were rather basic and did not help the user to get a better understanding of their well-being. For example, the question: ''How focussed are you?'' where the participant is asked to give a rating between 1 to 5 (where rating 1 is labelled not very focussed and 5 is labelled very focussed). In total four similar questions were asked on the topics stress, focus, sleep and energy. It was rather just a tool for Recharge to compare these questions to the end results (where users hopefully score higher at the end). The value of showing that users felt less stressed at the end compared to the beginning of the week is to visualize the success of Recharge for the user and to show it to future customers.

However, these types of questions could be improved to make the onboarding more meaningful for the user. Furthermore, by doing a literature study on how to measure well-being qualitatively by asking the right questions the data becomes more valuable. If these questionnaires could be backed up with credible sources, the success of the Recharge week becomes more credible and would sell better to future customers.

To make the onboarding more meaningful the well-being measurement should be based on reliable sources to measure the Recharge success and to guide and inform the user about their well-being. Furthermore, The onboarding provides a good opportunity to implement a user's personal preferences where the user can select the topics they are interested in. Moreover, onboarding can often be a bit long and dreadful. However, halfway through the survey most users are already invested in the app and want to see what it is like. By making the user feel excited during the onboarding and providing a fun taste of the program these engagement feelings could be enhanced.

Therefore, for the onboarding a small and fun activity was added to let the user feel engaged with the app and feel like they already have completed their first Recharge activity. After the engagement, a valuable and simple well-being questionnaire was set up to measure the user's mental and physical state. At last personalized questions and preferences would be presented to know the users' characteristics better and to play into them. In this way, engagement increases slightly as well because it is one criterion of the engagement guidelines which is discussed in the previous chapter (Wei, Y., 2020).

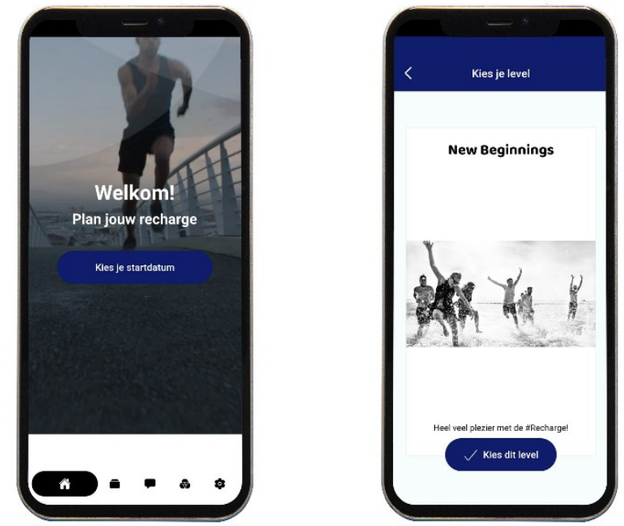


Figure 35: Current onboarding Recharge

ENGAGEMENT

To let the Recharge user experience a fresh start and make them feel excited a small box breathing session would occur. In this way, the user starts the onboarding process relaxed and calm and shows already how easy it is to complete a small task of the app without going through the interface first. After this small activity the user is referred to the wellbeing measurement, but more on that later. The screens were first drawn on paper and later visualized in Figma (see figure 36)

1. In the first screen, the user is asked to log in with their account. This account is given to them by their company and they should register online to have access to the app.

2. After logging in a welcome screen appears. It consists of a welcome and tells what the user can expect and what the onboarding will provide for them. In this situation: Personalize the journey to make it perfect for the user's needs. When communicating to the user through the app the communication is made easy, simple, personal and has a positive tone of voice to increase engagement with the app as shown in the engagement guidelines (Wei, Y., 2020).

3. On the third screen, the small box breathing session starts. A countdown of 5 seconds will play automatically on the screen and fun and smooth visualization will start to play in the background to entertain and guide the user. When the user needs to inhale the clouds on the screen move toward the user and become bigger. While exhaling the clouds go away from the user and become smaller. After 20 seconds the box breathing stops.

4. The box breathing stops with a small praise towards the user and refers the user to the next screen.

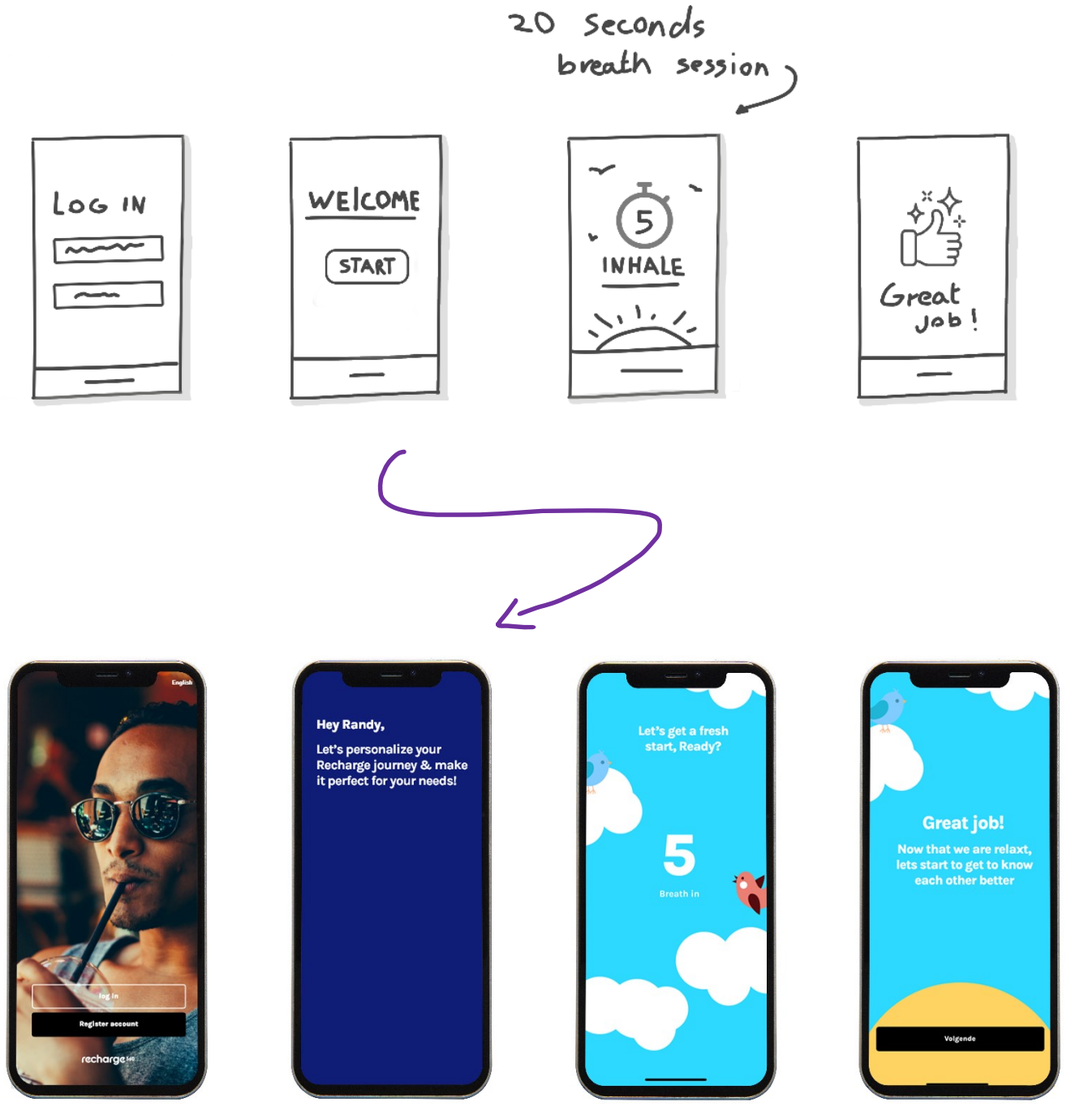


Figure 36: redesigned onboarding idea

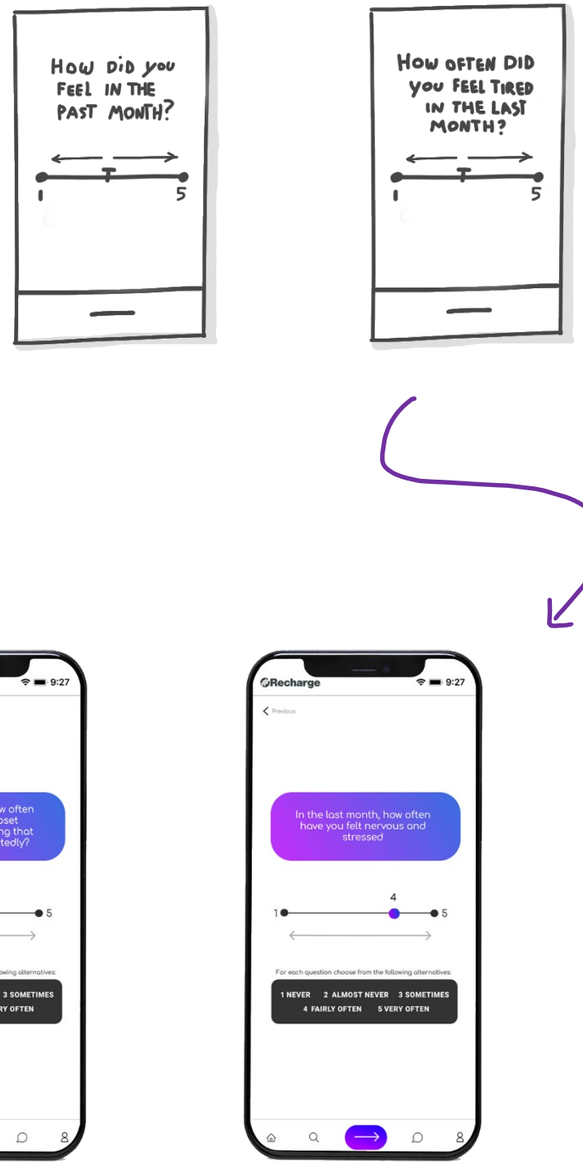


Figure 37: Wellbeing measurement ideation with rating scale

WELLBEING MEASUREMENT

2

After the breath box session, a well-being measurement takes place. A set of 6 questions are asked to participants that are based on the perceived stress scale (PSS) which is a tool to measure people's mental wellbeing (Cohen, S.,1994). These questions are:

1. In the last month, how often have you felt nervous and "stressed"?
2. In the last month, how often have you felt confident about your ability to handle your personal problems?
3. In the last month, how often have you felt that things were going your way?
4. In the last month, how often have you felt that you were on top of things?
5. In the last month, how often have you felt that you were unable to control the important things in your life?
6. In the last month, how often have did you feel tired during the day?
7. In the last month, how often did you feel distracted during the day?
8. In the last month, how often did you felt tired when waking up?

Although the PSS is only a tool to measure stress it still overlaps in order topics. For example, having the feeling that you are not feeling in control can refer back to a lack of autonomy or competence. The three last questions were added and were not literally taken out of the PSS scale but were inspired on them. After rating these questions from 1 to 5 (see figure 37 for scale). An overview pops up which shows the user their current well-being and provides feedback. With this data, the app recommends topics which score the highest to improve on.

3 PERSONALIZATION

The last step of the onboarding experience is to personalize the experience to the user's preference. When looking at the current checkbox feature the app provides the users with tasks that would improve well-being in general. When users write down their goals in the onboarding, for example becoming stronger, the current app does not play into that need specifically when looking back at the checkbox feature. Therefore, setting a goal in the app can feel a bit meaningless. With this connection between the onboarding and checkbox in mind, a screen is added where users can select topics that they are interested in and these topics would appear more often on the checkbox screen.

On the first screen, the user is asked what their goal is for the coming week. In this new screen, an extra goal is added. This is because users can have several goals that they would want to achieve in the week. After writing a goal, for example wanting to exercise more often another screen appears to see what topics they are interested in. In this case, it could be feeling energized and becoming stronger. With this information, the goal is clear to the user and the apps know has data that it should recommend to the user. After selecting the topic some last details on the user's profile can be added where a summary of the interested topics and goal appears. After confirming and pressing start on the profile screen the user is ready to start their Recharge week.

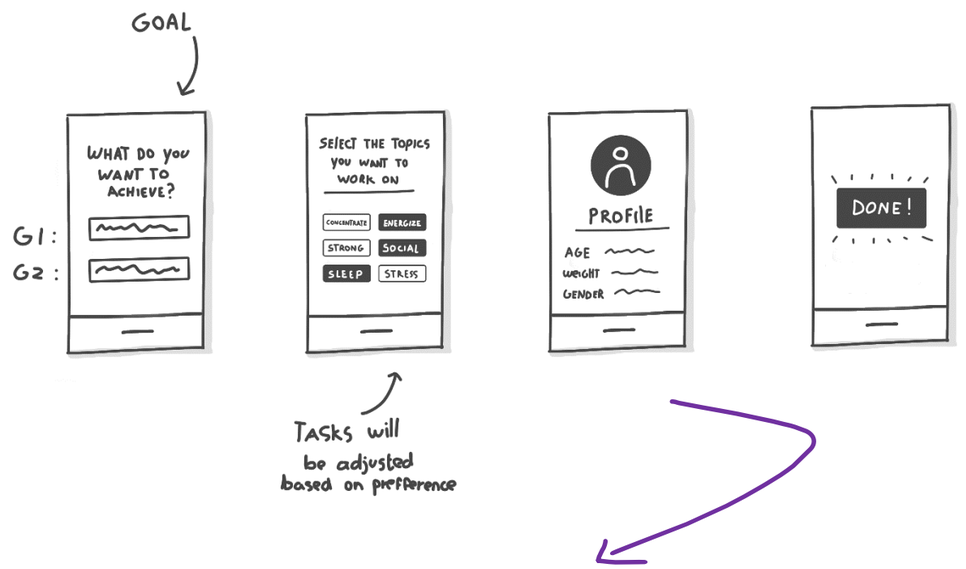
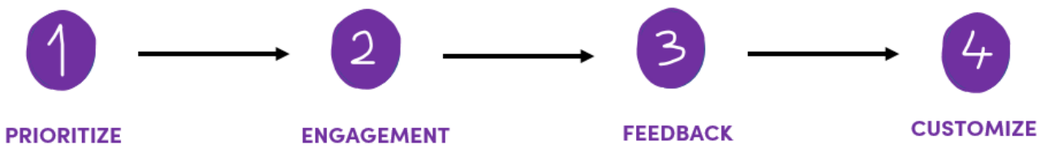
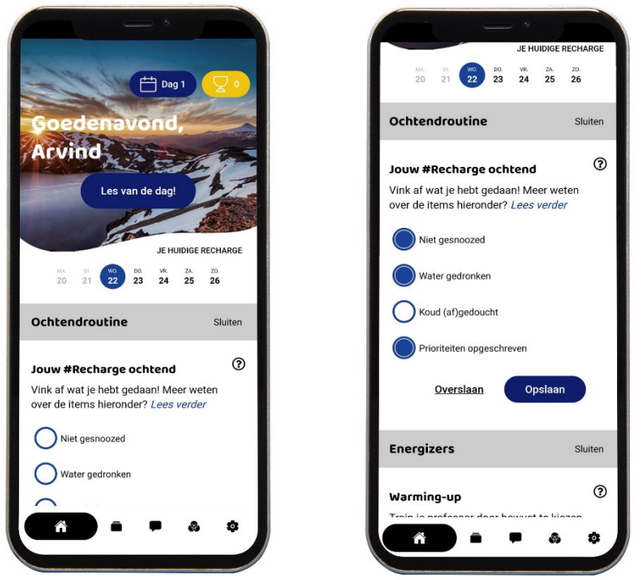


Figure 38: redesigned onboarding idea (personalisation)

4.3 CHECKBOX

Based on the interviews with the users the checkbox system was preferred and many users liked the aspect of having a clear overview of the app that showed the tasks of the day. However, people found that the experience with the checkbox felt a bit empty. Furthermore, the smaller tasks were preferred above the bigger tasks due to time management issues and having a high workload. The tasks that the Recharge app provided to energize users were for example to watch a 15 min video lesson or following a meditation audio session. Moreover, having an insight into tracking performance and customising the checkbox to users' liking increases motivation and engagement levels (see section app analysis and literature study).





1

PRIORITIZE

First of all, just like the small box breath session at the onboarding, several tasks were made smaller. When the users had to choose a topic it is important that relevant knowledge and activities are provided for them through the app. In this research suggestions for small tasks were created and visualized but are not fully executed due to the limited timeframe. Popular goals that users wanted to achieve with the Recharge week were related to the topics: social, energising, sleep and relaxation. For these topics, some smaller and less time-consuming tasks were created. More small tasks should be created and would be a future step for the content creator of the Recharge app to implement and create them.

Social:

- Call a friend today
- Give 3 compliments to a stranger today

Energize:

- Do 10 jumping Jacks today
- Go for a 10min walk today

Sleep:

- Read a book before bed today
- Turn of your screen 1 hour before bedtime

Stress:

- Do a short mindfulness session today
- Plan 2 breaks in your agenda today

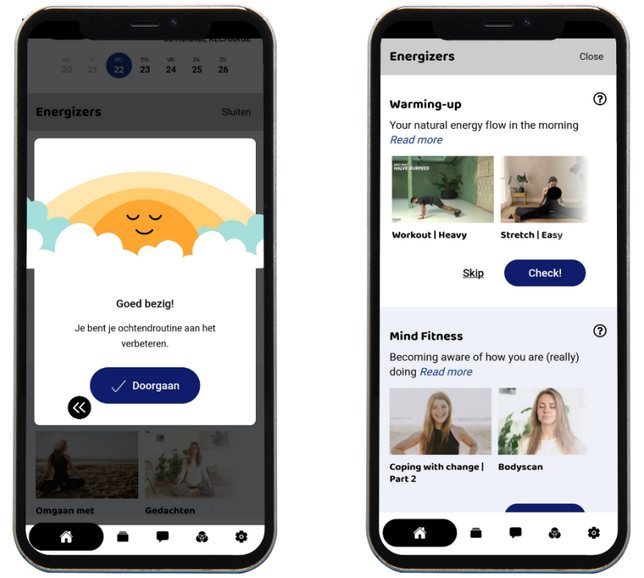


Figure 39: redesigned checkbox idea

2 ENGAGEMENT

In order to incorporate engagement in the checkbox, a small analysis was done by looking at other apps on the market. During the brainstorm session and analysis, we found that streaks are a powerful way to engage users to use the app more frequently. Snapchat makes great use of implementing streaks in its app. People tend to maintain a streak and the longer a streak goes on, the greater the desirability feels to maintain that streak (Hristova, D., 2020). This is a great tool to help users to want to use the app more frequently (because they do not want to lose their streak) and to teach them a new habit (streaks are only given when the tasks are completed).

3 FEEDBACK

Based on the app analysis and interviews the current Recharge app scored low on providing feedback. By adding an extra tab on the home menu to show the user's progress they are informed how many tasks they have earned so far. They can also see when they have earned it and can compare their score to previous pulses. Furthermore, future feedback tools such as showing the streak high score or showing how many tasks were completed in a specific category were added later in the process.

4 CUSTOMIZE

The last step for the onboarding is to add custom tasks to the checkbox. This can be a list of popular tasks that other users like to use or good habits users already do in their current day and would like to maintain during the week. When users already make use of a healthy task, they should write this task down and add it into their checkbox which can be placed as a morning, afternoon or evening activity.

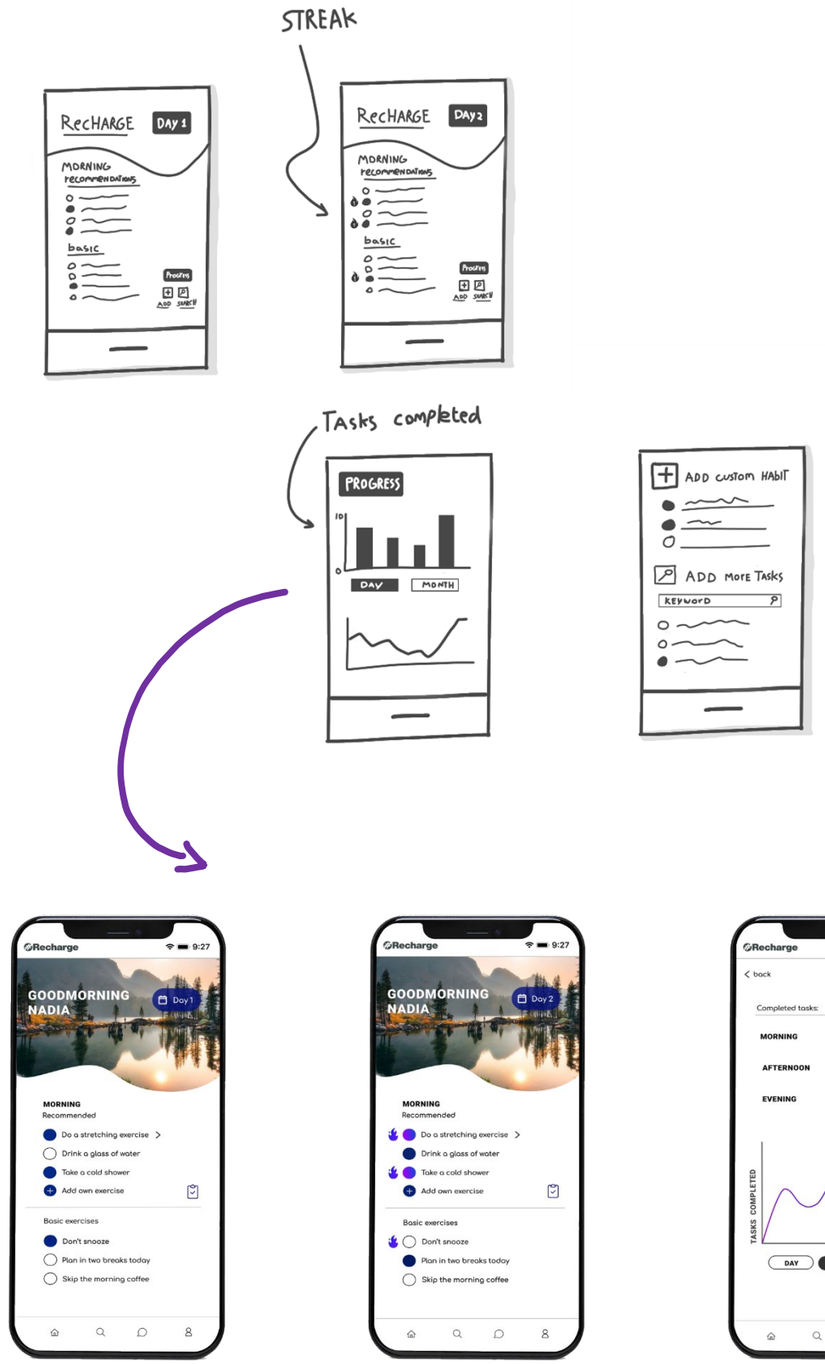


Figure 40: redesigned checkbox idea

4.4 ITERATION 1

After finishing the design ideas and visualising them on screens the design ideas were pitched to the Recharge team and TU Delft supervisors. Both parties saw opportunities and threats in the design ideas and would like to see some adjustments before pilot testing it. These insights can be seen in figure 41 where the supervisors and Recharge team give comments on the first designs and what the new implementations will be.

Wellbeing recommendation

It was pleasant that the questionnaires were based on reliable sources, were more specific and worked as a way to reflect on the user wellbeing. However, showing the user that they are stressed or tired gives them a **negative start of the week**, because they start with the label '' I am stressed and tired''. Furthermore, after filling in the questions a person can experience that they feel not stressed at all, but because the outcome says that they are, they can doubt themselves and maybe believe that they are stressed while in reality, they are not.

Wellbeing questionnaires

The questions were more specific than the previous questions, but they could be **more targeted towards the wants and needs of the user instead of only being a tool to measure wellbeing**. For example, some small user preferences (besides asking what topics they are interested in) could be meaningful and shows that they fill in the questionnaires to create a better experience for themselves rather than just giving input data towards the app to measure success

Common obstacles

Setting a goal is an important feature to understand what a user wants to achieve with the program. However, as we know many users find it difficult to reach these goals. After the interviews, we found that many people had different reasons for why they did not reach their goals and most of these obstacles were common with other users. By **not only asking what users' goals are but also what their obstacles are** Recharge gets to know its target audience better and can play into their obstacles to guide them better.

Profile

The Recharge team commented that the profile screen was not necessary. This is since users already create a profile online through the website. By **implementing the profile screen again in the app would be double**. Besides this is data the Recharge Company already has. It could be helpful to have a summary of what the users choose in their profile but could be used as a future recommendation and not a focus point for now.

Breath session

The breath session is a fun way to start and engage users. The interaction with the breath box could use **more work and explanation on how it works**. Furthermore, the style and interaction of the animation should be feasible for the Recharge team to design.

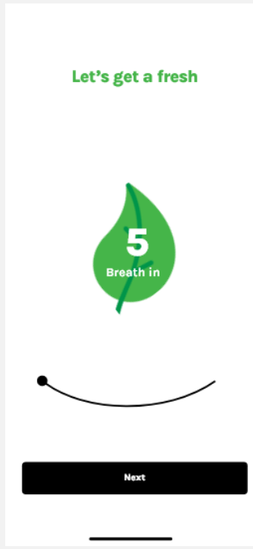
Streaks

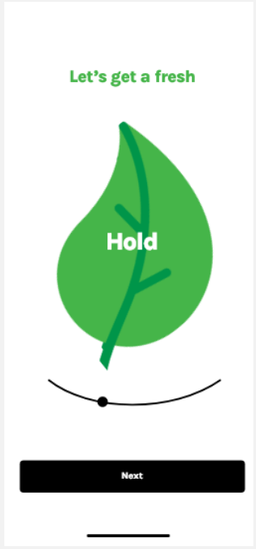
Adding streaks is a nice and powerful tool to implement in the design. However, for this research it should be taken into account **what is testable**. We already know that streaks work and could be good to implement for Recharge. However, it is time-consuming and not necessary to test this for the target audience. Therefore, placing it in a future recommendation would be better.

Figure 41: Severity scale iteration 1

ITERATION 1: Adjustments

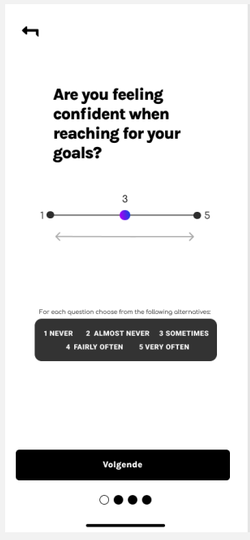
After the iteration feedback changes were made. The profile and wellbeing recommendation graph were discarded from the app. The other features were added or improved which can be seen in the figure below.

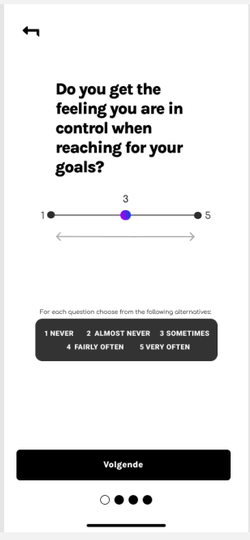


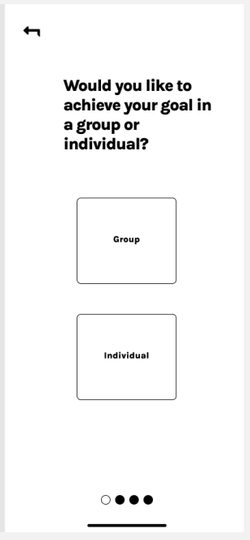


Breath box session

The style of the box breathing session was simplified to give it a calmer look. Furthermore, a tracker line was added to give feedback to the user on how much time the session would take and the interaction was prototyped in Adobe after effects and XD so users could experience the session themselves.

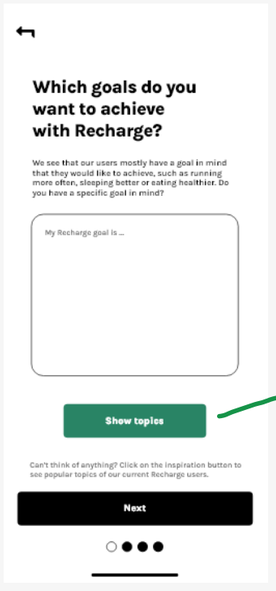


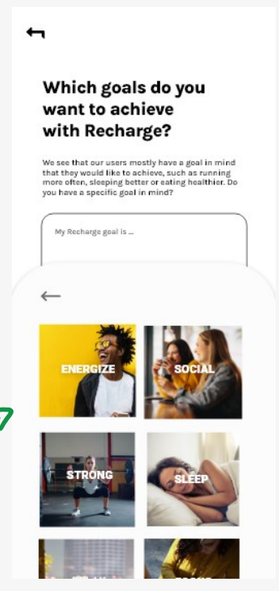


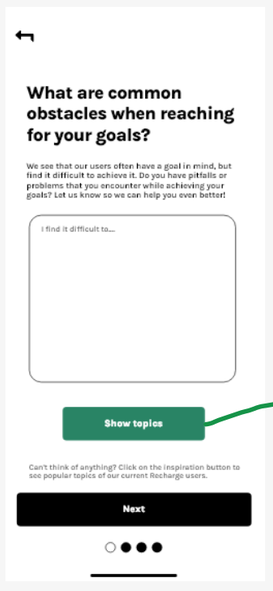


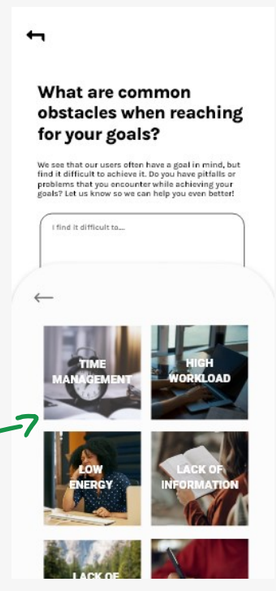
Wellbeing questionnaires

In order to make the questionnaires more to the user's need it was shortened to six questions and were less direct. Furthermore, preference questions were added such as if the user would like to achieve the week in a group or individual.









Goal setting and obstacles

The app in this design was supported by selectable topics. Just like the last design, only now users have the choice to type in their answers or select the desired topics. This is also done for the option obstacles where the app asks for common obstacles for reaching goals. The reason why topics are shown is that these open-ended questions can be difficult to answer for some and leads to feeling stuck in the onboarding process. Providing popular topics guides the users more easily through the onboarding process and gives inspiration on what common goals or obstacles for the week could be.

4.5 ITERATION 2

Again after prototyping the new screens, the design was pitched to the TU supervisors and the Recharge team. This time the interaction with the app was testable and the target audience could navigate through the app and see how it worked instead of looking at visualizations of screens. A severity analysis was made again based on the first iteration and is visible on figure 42. This was the final iteration of the first pilot test that was done with students of the TU Delft.

Wellbeing questionnaires

The well-being questions were improved, but still they were not specific enough for the user. For the company, it was valuable because the measure of success could be shown to future customers. However, the onboarding questions should be **more meaningful towards the needs and wants of the user**.

Setting goal

The setting goal part was fine, but a brief brainstorming session gave the insight to place the **goal setting at the beginning of the onboarding**. In this way, the well-being questions could be made about the chosen goal of the user. This would be more meaningful for the user, because they answer questions about their chosen goal to their liking and for Recharge to guide them in the best way possible during the app. These changes however should be implemented and are quite a change.

Checkbox

There was not a lot of feedback on the checkbox itself. However, to make a more meaningful interaction a **small guidance on the small tasks would be preferable** and interesting to work out. However, due to limited time and resources (building a recommendation feature in Adobe XD) prototyping could be challenging.

Styling

Before testing it would be wise to start looking at the Recharge style and make sure the app screen appearance would align with each other. **Creating an aesthetic simple, coherent and appealing interface** with bright colours can increase engagement with the app according to the engagement guidelines.

Figure 42: Severity scale iteration 2

MOODBOARD

To fulfil the four criteria of the engagement guidelines and to make sure the app fits within the company's style a mood board is created (see figure 43). The four criteria were linked to aesthetic appeal where the designer should keep in mind that:

- ☑ The screen shows a graphic presentation rather than too much information
- ☑ A pleasing color scheme with bright colors (eg, light green, white) is incorporated
- ☑ There is a simple screen presentation that is not overcrowded
- ☑ There is a coherent scheme of colors, pictures, and themes throughout the intervention

This board is inspired by the Recharge brand guide and previous app, engagement guidelines and other habits/health apps on the market. This mood board is used in order to make the final design for the pilot test.

Figure 43: Moodboard

ITERATION 2: Adjustments for pilot test

Setting the goal

Based on the last criteria the design was changed. The first major change was to delete the open-ended question at the goal-setting part. During the interviews, we saw that many users had a lot of different. However, the Recharge app simply does not have the capacity to fulfil the need for these goals. For example, people have written down that they want to look less at their phones. After the Recharge week, they had a pleasant experience but were disappointed that they did not achieve their initial goal. The people with the more common goals, such as feeling relaxed or energized did accomplish their goals because that is a topic Recharge can educate on. Therefore, it would be best to leave out the open-ended questions and present the topics that matter where Recharge can help. However, this does not mean Recharge only can help with the broader topics.

By conducting more Recharge interviews we noticed a group of people wanted to have less screen time or wanted more advice on parenthood combined with remote working. These are smaller topics Recharge could offer and could be added to the topic list once they can deliver education or tasks on that topic. By providing a good amount of topics in the goal-setting stage the user feels they are still in control to make the choice where they want to improve on (which satisfied the need for autonomy) and prevents disappointment during the app usage if the topic is not treated (see figure 44). The goal setting topics are visible in the figure below. Each topic has its own title which explains the theme of the topic and beneath it, a small description of what to expect is written down. These topics are not fixed and Recharge can decide to add more topics that become relevant in the future or discard topics because data shows people are not interested in them. Furthermore, for content creators of the Recharge team, this can be a valuable tool because it shows what topic the most Recharge are interested in. Based on this data more new tasks or educational information could be added to the program to make it more valuable.

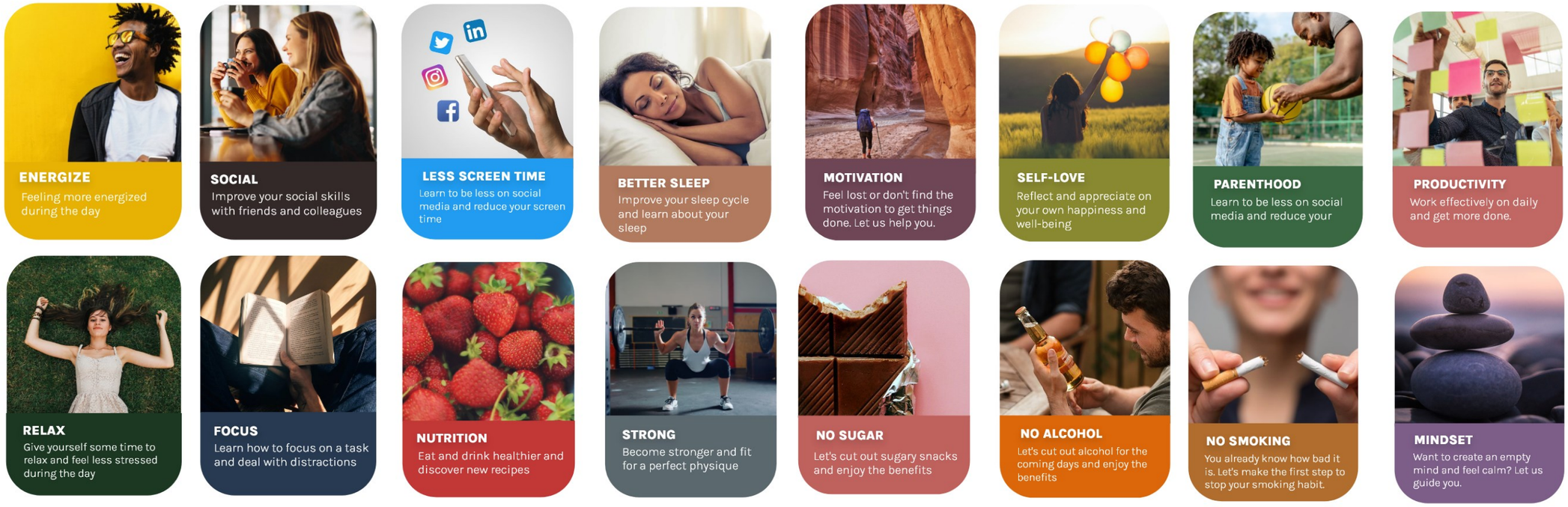
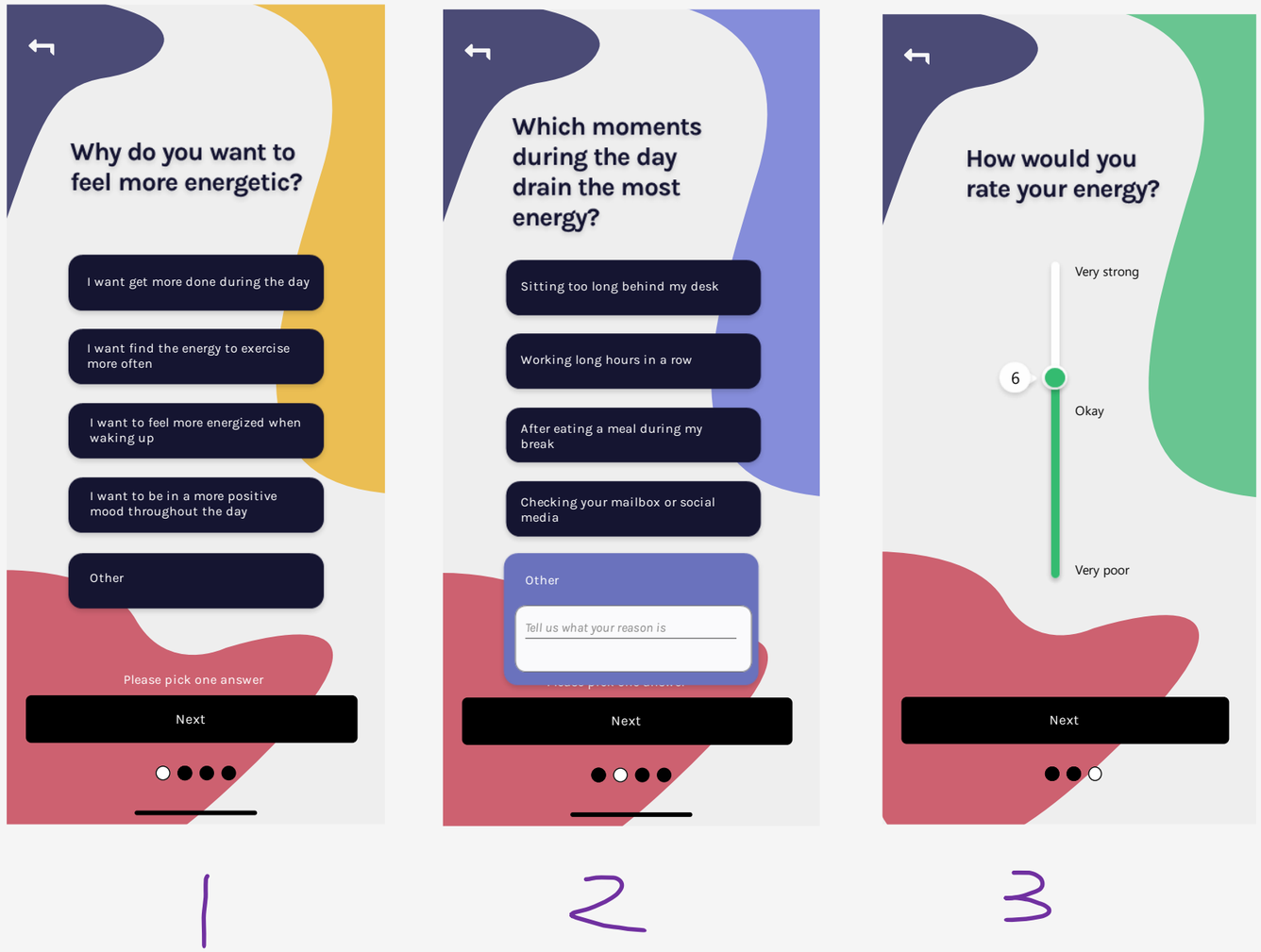


Figure 44: Goal topics for the app

Figure 45: well-being questions



Wellbeing questions

When the goal is set by the user, questions about the goal can be asked. In this way, Recharge finds out why the users' preference is and how they can make sure they provide the best help for their users. Let's say a user chose to feel more energized during the day. After selecting the topic energize three questions appear. The questions are categorized into three sections:

1. the first question is about the reason why the user picks a particular topic.
2. the second question is about possible obstacles or pitfalls for users on why they do not achieve their goals.
3. The third question is about the overall happiness on the topic level.

This structure is used for all topics. The user gets the first question and is allowed to pick the statements that they think would fit with them. For every statement, another option is placed. When all four statements are not favourable for the user they can write down their reason. Furthermore, by letting the user think about their workday and answering these questions it acts as a reflection exercise.

Making questions for all 16 topics would be too time-consuming for the project. However, to let the users experience choice freedom within the app more topics needed to be developed. Therefore, the top eight topics were made interactive for the test and wellbeing questions were made specifically for these topics. These eight were the most popular topics that were mentioned during the interview.

Obstacles

After answering the questions about the topic another topic list appears. This time it asks what common obstacles are when reaching the desired goal. Again here the topics consist of the most popular ones, but also smaller ones (see figure 46). Again Recharge gets plenty of data on where their users are struggling on and could design tools to overcome them and users reflect on what bothers them when reaching their goal.

Rounding up

After filling in the obstacles only two questions remain. The first question is to see if the user wants to achieve the goal in a group or individual. Recharge would like to stimulate users to work as a team because this can motivate people to be invested in the Recharge pulse. However, after speaking to the target audience we saw that people also want to do the week on their own. This choice should stay optional and for the users that do not know yet which one to pick there is a mixed option. The last question was about people's overall happiness of their well-being level. This in order to compare it at the end of the week and see if the overall well-being increased or not.

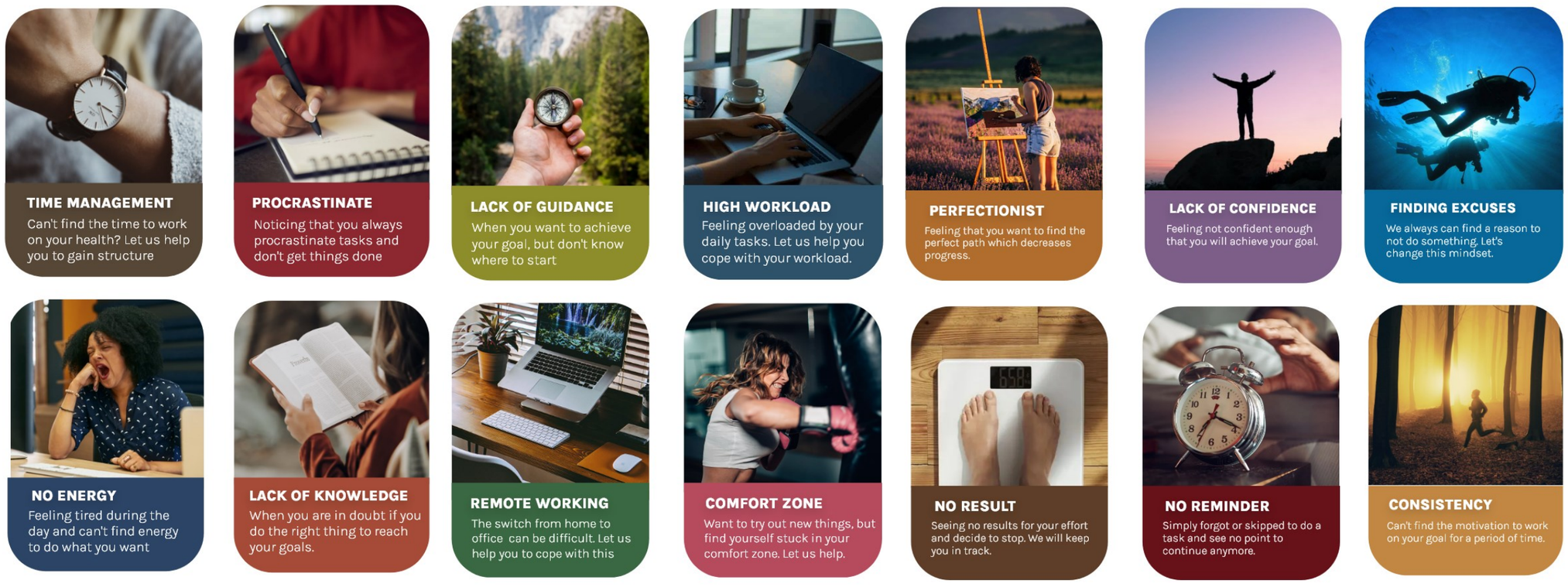
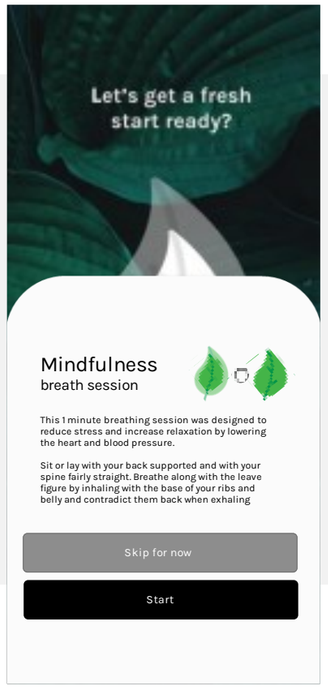
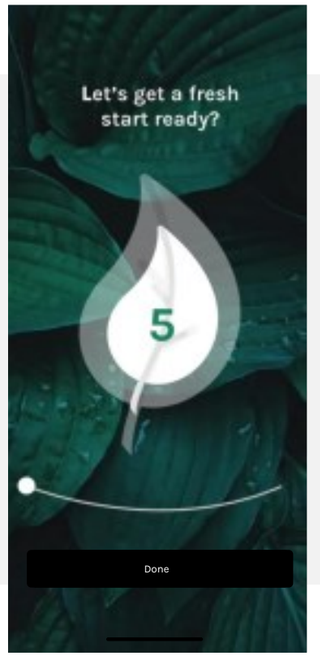


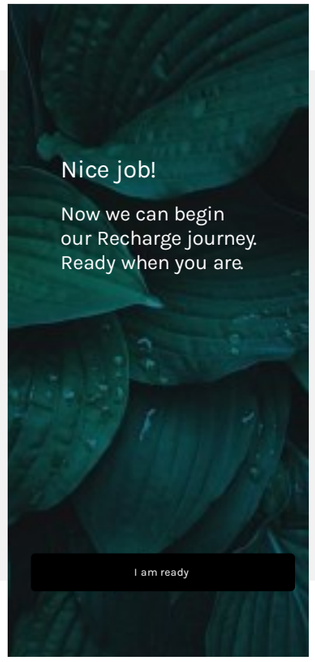
Figure 46: obstacle topics of the app

Box breath session

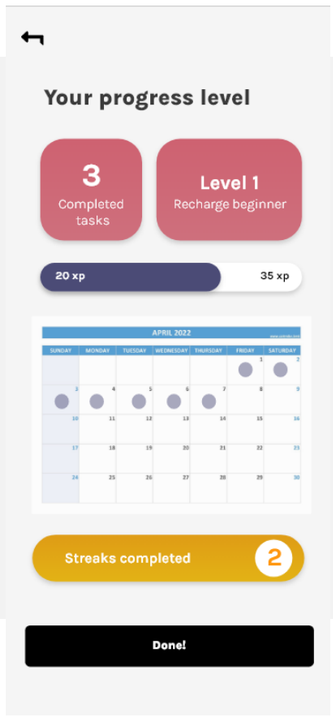
The box breathing session was adjusted to a more fitting style and was placed at the end of the onboarding. This is because after filling in the questions users might be ready for a short break to refresh. Furthermore, a skip option was added for people that did not feel in the mood to do a box breathing session. Also, text was added before the countdown started in order to prepare the user for what is coming.

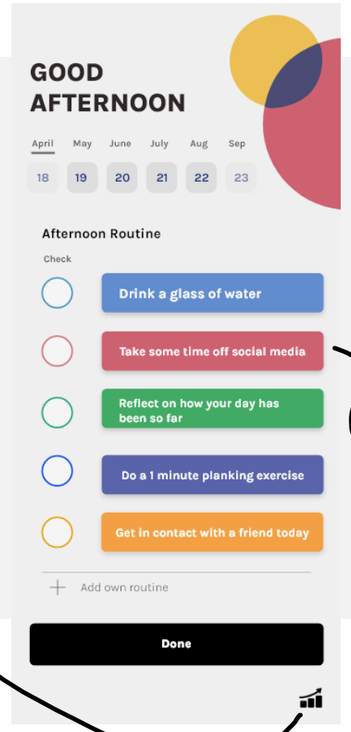


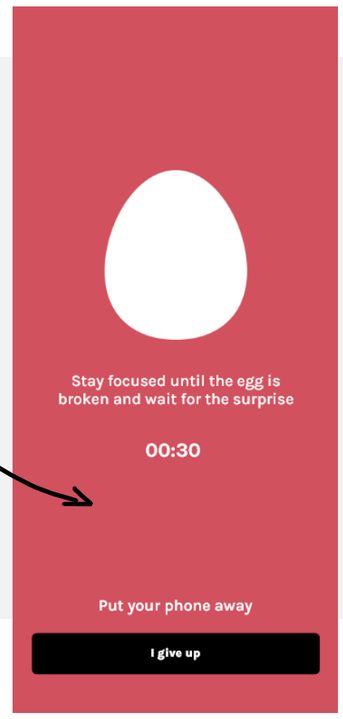


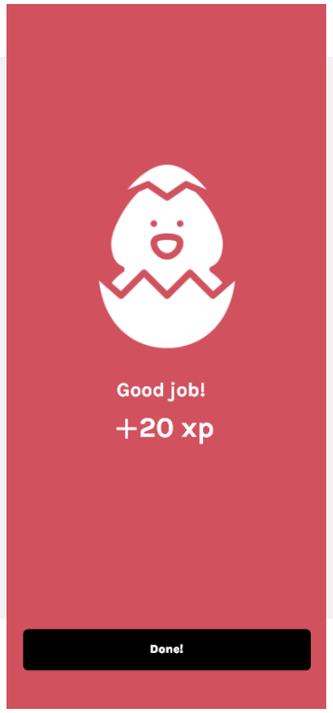


Home









Checkbox

For the user test, a checkbox home screen was made to see if users would like the smaller tasks more. Furthermore, it was possible to click on these smaller tasks. For example, when a user tries the challenge to stop looking at their social media for half an hour (or longer) a screen stays locked on their phone and reminds them they participated in the challenge. It has a countdown and an egg that after a longer period of time starts breaking. When the challenge is completed the users earn points and with these points, they can win rewards. These rewards are given by the Recharge Company and is a project they are currently working on.

4.6 Pilot test

For the pilot test, 10 participants were asked to try out the concept design. These participants were students at the age of 23 and 27 years old. The pilot test would take around 30 minutes and was set up as can be seen in the figure 47.

The test consisted of a concept app that was presented on the laptop, the current Recharge app that was presented on the phone and attributes, such as a glass of water or a pen and paper to conduct tasks with. The user was asked to navigate through the concept app and the Recharge app with the goal:

''Go through the app and finish at least two tasks that the app is providing''

After completing the tasks a survey had to be filled in for both apps to measure the success of the concept app. This was done immediately after one goal of the app was completed. In order to get reliable results and make sure our users were not biased on the previous app they were divided into two groups.

Group A: (User 1 to 5)

Starts with Recharge app and end with the concept app

Group B: (User 6 to 10)

Starts with concept app and end with the Recharge app

Survey

In order to measure the success, we took a look back at the design direction. The goal of the direction was to create feelings of engagement, confidence (competence) and personalisation (autonomy). To ask the right questions the survey was based on a question from the User engagement scale (UES) (O'Brien., 2018) and questionnaires related to the METUX model at the interface sphere (TENS-interface) (Peter et al., 2018) The survey questions can be found in appendix 3.

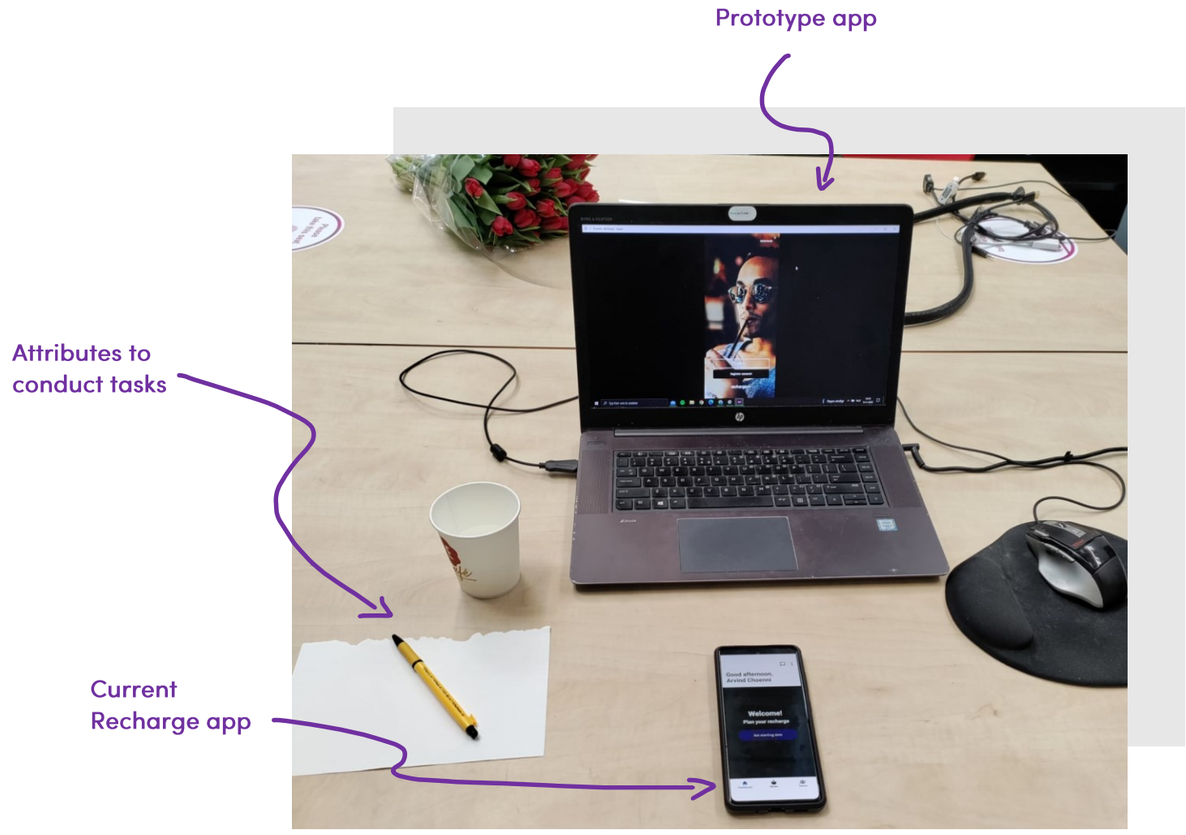
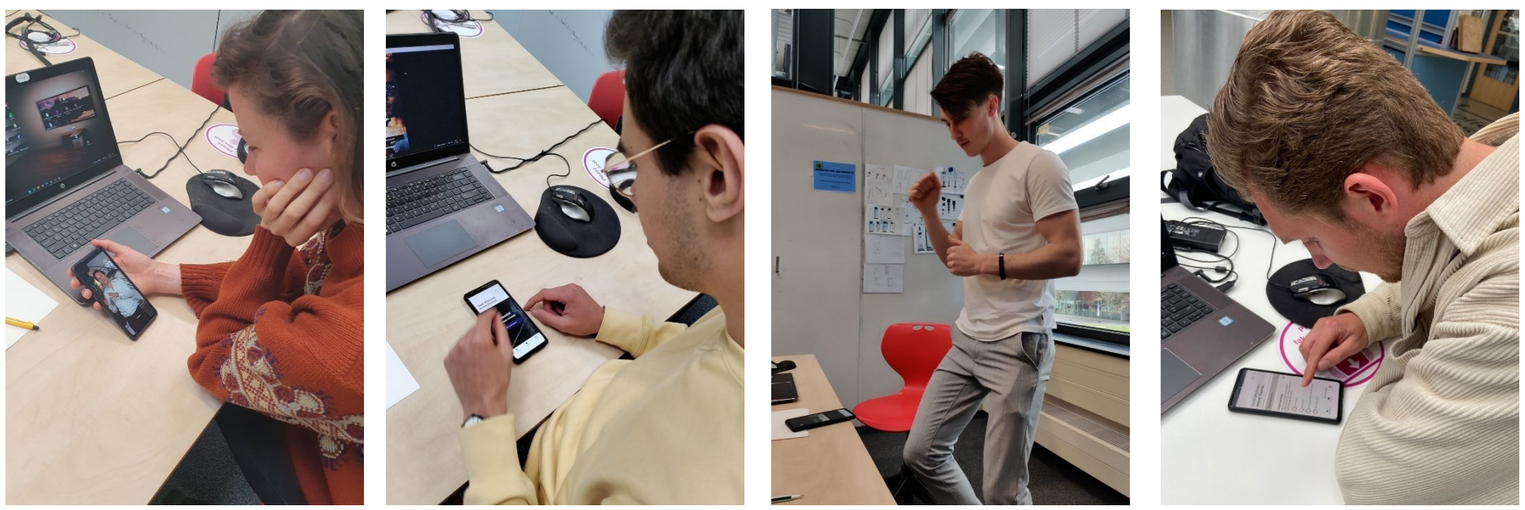


Figure 47: Pilot test set-up



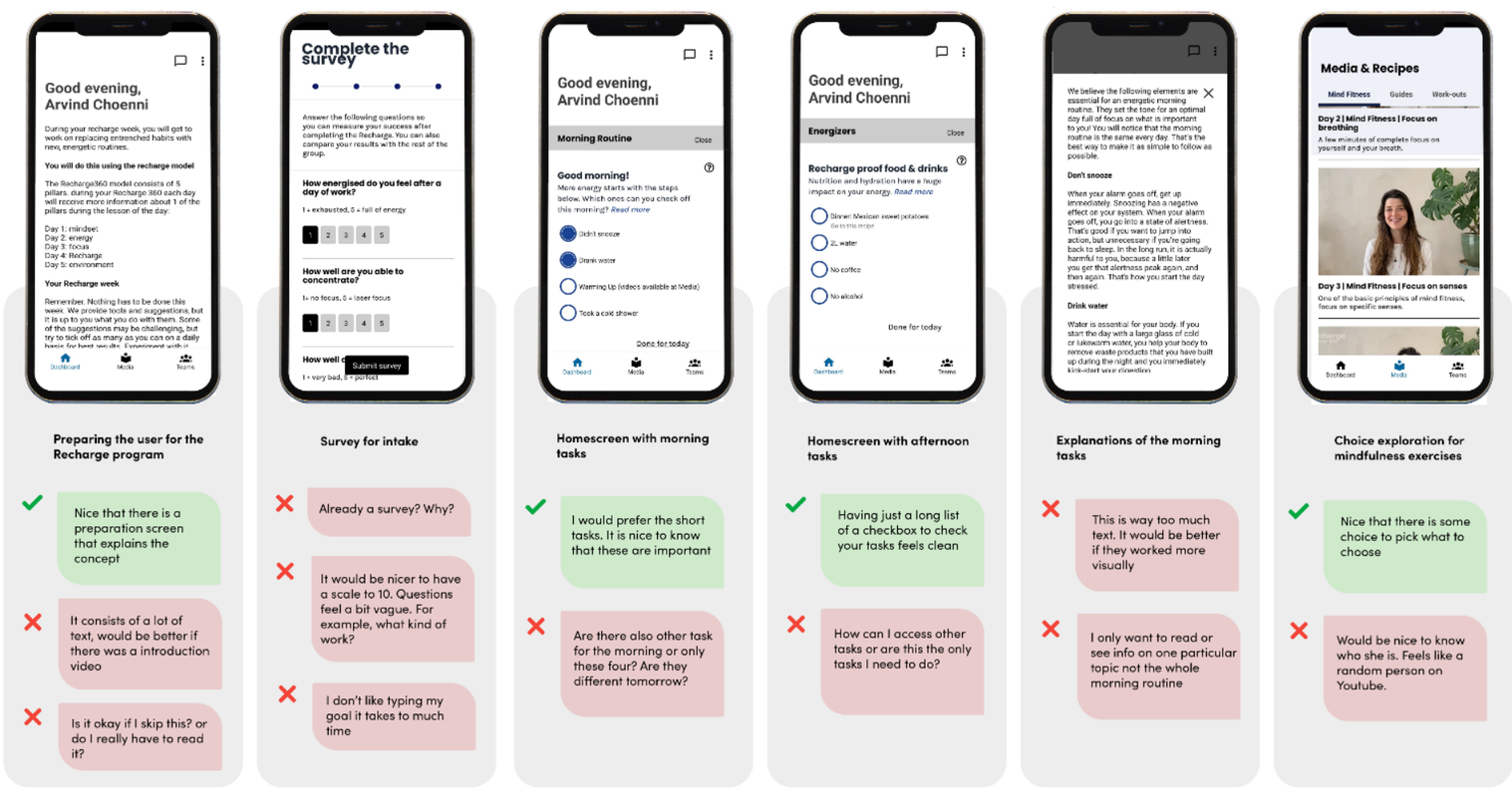


Figure 48: Recharge app pilot results

Recharge app test

The first five participants started by testing the Recharge app. Because tasks were bigger in this app (follow a workout video of 15 minutes) or were not doable (take a cold shower) we asked users to still pick the ones they would try out and why. We tried to be as quiet as possible to see if people would actually do a mindfulness session or workout and how far they would come if they did.

Conclusion

For the onboarding experience, users found that the app consisted of too many texts and skipped most of the time the explanations or preparations. People were interested in why snoozing or taking a cold shower was important however after clicking the ''more info'' button users were displeased to see there was again way too much text written down and were not bothered to read further.

The term survey at the top screen (second screen) was seen as negative and felt like doing work for the Recharge company rather than improving the experience for themselves. Furthermore, people were not fond of typing their goals and would like to have a more accurate scale to measure their wellbeing (e.g. a scale from 1 to 10).

At last, people liked that there were options provided and in general, they liked the checkbox system and small tasks which overlapped with the opinion of the Recharge users. However, a future recommendation to Recharge would be to introduce the coaches that give the mindfulness and workout lessons, because people simply did not know who their teacher was.

Concept app test

This test was conducted on the laptop and was prototyped in Adobe XD. Again we asked participants to complete two tasks. Because these were smaller tasks that could be easily done during the pilot test all users completed them.

Conclusions

Users were satisfied with the onboarding experience and overall positive feedback and comments were given on it. The questionnaires were labelled as clear and users found that there were enough statements to choose from. A helpful implementation would be to add a summary at the end of the onboarding experience so users could get reminded of what they picked and could access a quick overview.

For the checkbox, there was more feedback given. First of all, people did not find that there was enough choice freedom. They felt like they put all their data in the app, but when arriving at the checkbox they only saw general 5 topics to choose from. It is not possible for this project to build a recommendation system in Adobe XD. In order to let users still experience choice freedom in the checkbox a second Adobe XD prototype was made where the users should pretend to have picked a theme, for example energize. After picking that theme the checkbox screen is adjusted on the theme energize and different recommendations were given. In this way, the user could realize how the concept would work if they had the choice to choose themselves.

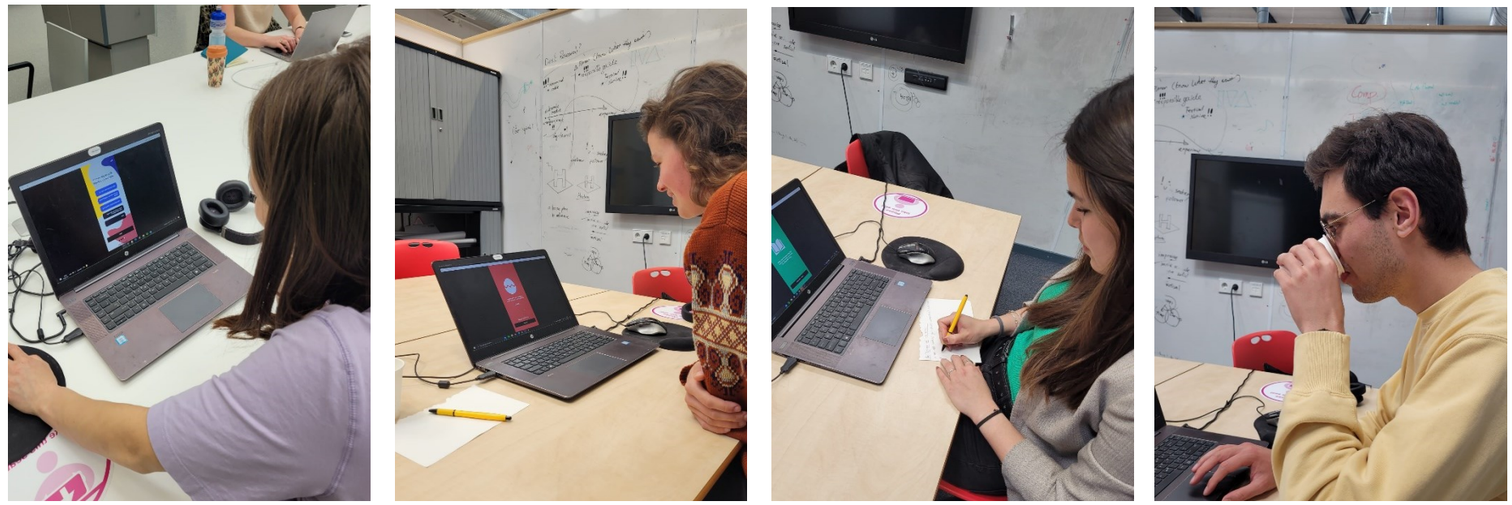


Figure 49: Recharge app pilot results

4.7 Survey results

After completing the tasks of the app, the users were asked to fill in a survey. The survey consisted of 13 questions which can be found in appendix 4. Each question was related to autonomy, competence or engagement. We will discuss the most relevant ones below.

Results autonomy

When looking at autonomy users felt more in control to follow their own routine in the prototype and found that the app was provided with useful options and choices in comparison to the current Recharge app. Providing the feeling of creating one's own routine was a major improvement when comparing the two apps with each other. Where most participants rated a 2 (strongly disagree) on the Recharge app and a 9 (strongly agree|) on the concept app (see figure 50). Although people felt that the concept app was provided with enough options, it did not apply to the checkbox part of the concept app. However, when looking at the Recharge app this was the other way around. People felt limited in choice in the onboarding process but found it enough in the checkbox section.

Results competence

For competence, users felt more confident to learn from the concept app and felt they would be able to achieve their goals better in comparison to the current Recharge app. After talking to the participants, the feature of personalizing users' goals and guiding them through the onboarding experience made them feel confident that this app would help them through the week. Still, two users found the ability to learn from the current Recharge app high as well because of the many activities they offer.

Figure 50: Pilot test survey results

Results engagement

When looking at engagement the concept app scored high on its aesthetic appeal. When comparing the second graph ''figuring out the app and tasks'' it went decent. Overall, users found the tasks in the concept app clear and to the point. However, the fact that the tasks in the Recharge app were difficult to finish, could have affected its score and explains why it is rated low. When talking to the user group, they mostly said that the amount of text in the onboarding and checkbox (which most people skipped) was too overwhelming. Most users did not read the explanatory text. This led users to feel lost in the navigation of the app. Another reason for this is that the current app consists of more tabs and the concept app only consists of two tabs.

Conclusion

Overall, the concept app was favoured over the current Recharge app. However, the app could still use some improvements on the checkbox part and some slight usability problems should be fixed. For the new iteration of the concept, the app should let users experience more choice freedom during the checkbox feature to give them the feeling that they can create their own routine. By creating a more customizable checkbox system linked to their preference, the app provides more useful to the users and can enhance autonomy. Furthermore, this can enhance competence as well since by providing more useful options users' goals can be achieved more fluently as well.

The next user test was conducted with current users of the Recharge app. This creates the opportunity to test the reflection on the concept as well. Because these users already have completed a pulse in the current app they know the reflection activities of the app. To place the users in a continuous feedback loop a third focus was developed where users need to reflect on their tasks, day and week. This was prototyped in Adobe XD and got tested by the target group. The current reflection activities can be seen in figure 27.

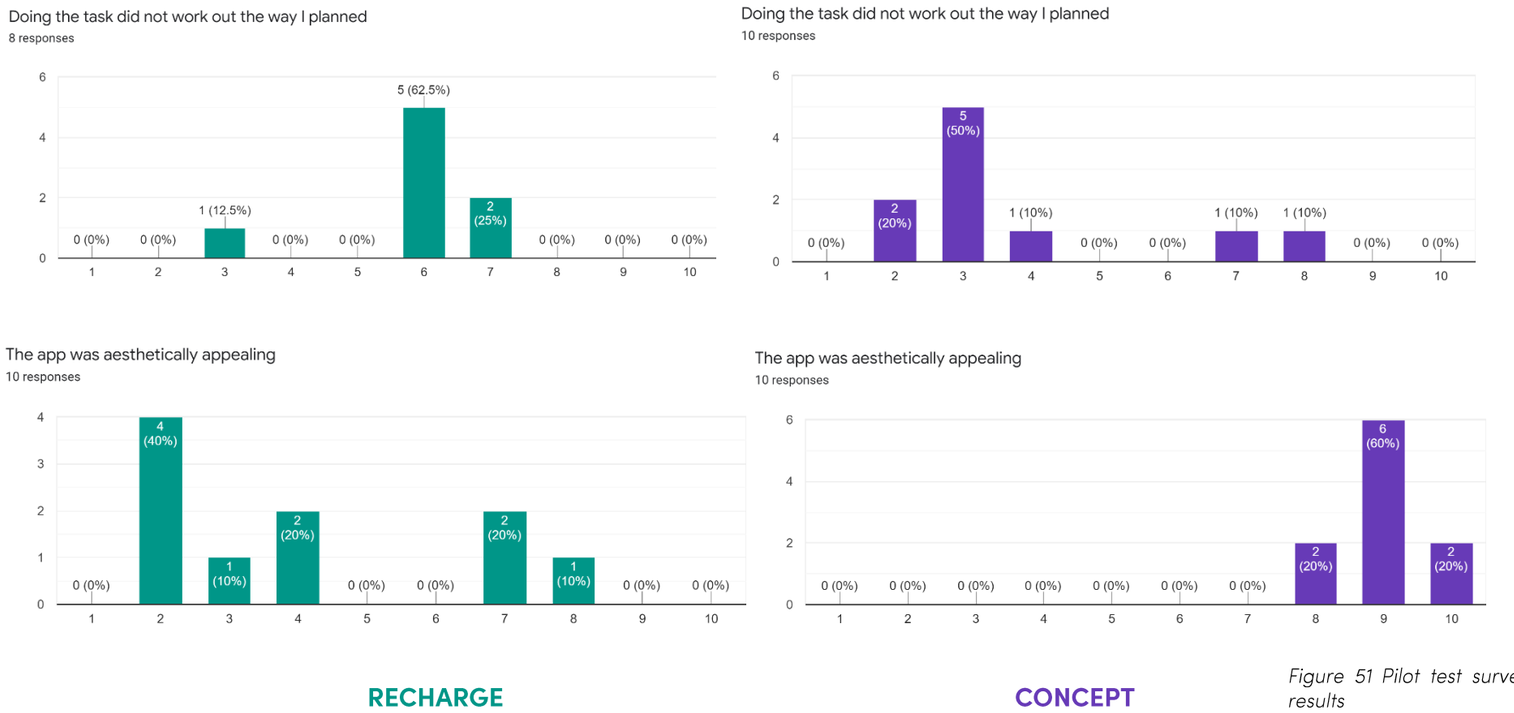


Figure 51 Pilot test survey results

Figure 52: Current reflection Recharge

4.8 CONCEPT: Adjustments for user test

Checkbox

This checkbox is created based on the user's choice of the topic energize in the onboarding. Changing the logo of the checkbox into an energizing icon guides and reminds the user that these activities can contribute to the topic energize. When scrolling down the screen it reveals the afternoon routine and later on the evening routine. The user is here are free to add tasks to their daily routine in the morning, afternoon or evening. The colours represent which theme the tasks belong to. Because most tasks can fit in several themes we categorized them into the ones we think are most relevant. The tasks that are offered can be categorized as popular ones (these are tasks most other Recharge users complete) or challenging ones (some bigger and more difficult tasks). To stimulate users to pick the more challenging ones the tasks earn more points when completed. When going to the progress tab (screen 4) an overview is visualized and shows what task category the user participates most in. Furthermore, users high scores, and points are visible. When more pulses are done and more points are earned the user is rewarded by levelling up. Starting with a Recharge beginner to a Recharge veteran. This checkbox was tested with current Recharge users to see if they liked these changes or not and will be discussed shortly.

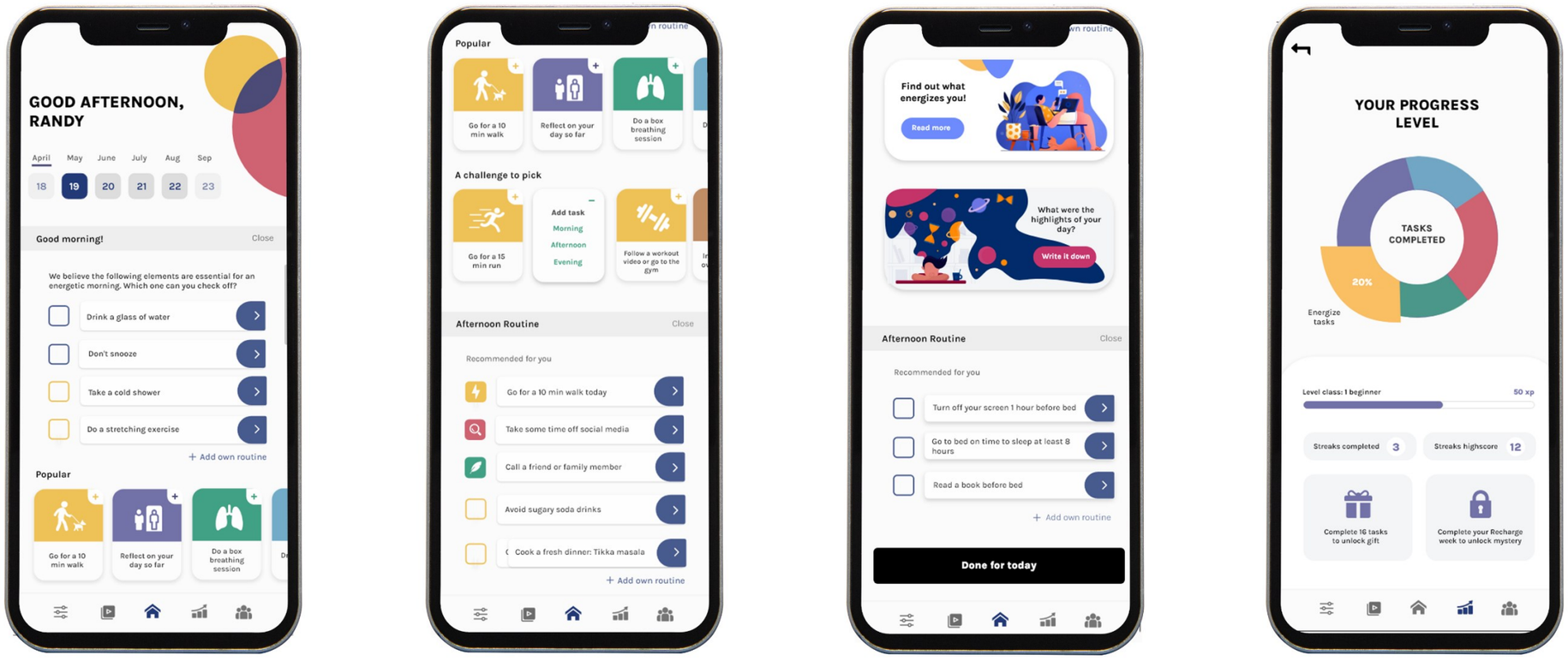


Figure 53: Checkbox concept

Reflection

At last, a reflection tool is created. In the current Recharge experience, users were asked to write down their top priorities and highlights of the day. Furthermore, after the Recharge week, they were asked again to fill in the same survey as the onboarding and users could see if the week helped them for example, lose stress or gain better sleep. In this reflection section users are asked how their day has been. Here the option to write down their thoughts or other relevant topics was provided which can serve as a daily diary. Giving users the option to write down their thoughts does not limit them in what they want to say. Furthermore, providing a diary function in the app can increase engagement according to the engagement guideline (Y, Wei., 2020). However, for some users it might be difficult to reflect on what they achieved or did during the day. Therefore, statements were provided to help users along and get inspiration on what to think about. These statements are scrollable and by simply reading and thinking about the statements the user automatically reflects on their day. To read these statements see appendix 6.

Furthermore, 2 questions related to the chosen theme were asked which were based on the user's problem which was filled in during the onboarding (e.g. not taking enough breaks) and if they reached their goal during the day which would be feeling more energized.

At last, the user is given the choice to select more topics where they want to improve on for the following day. When the user completes the week a survey appears which measures the success of the app and gives users the chance to reflect on their week. The questions are categorized into 5 sections: competence, autonomy, relatedness, engagement and overall well-being and consist of 20 questions in total. For the full questions see appendix 7. With this prototype in Adobe XD a user test was set up to test the three stages of the app: onboarding, checkbox and reflection

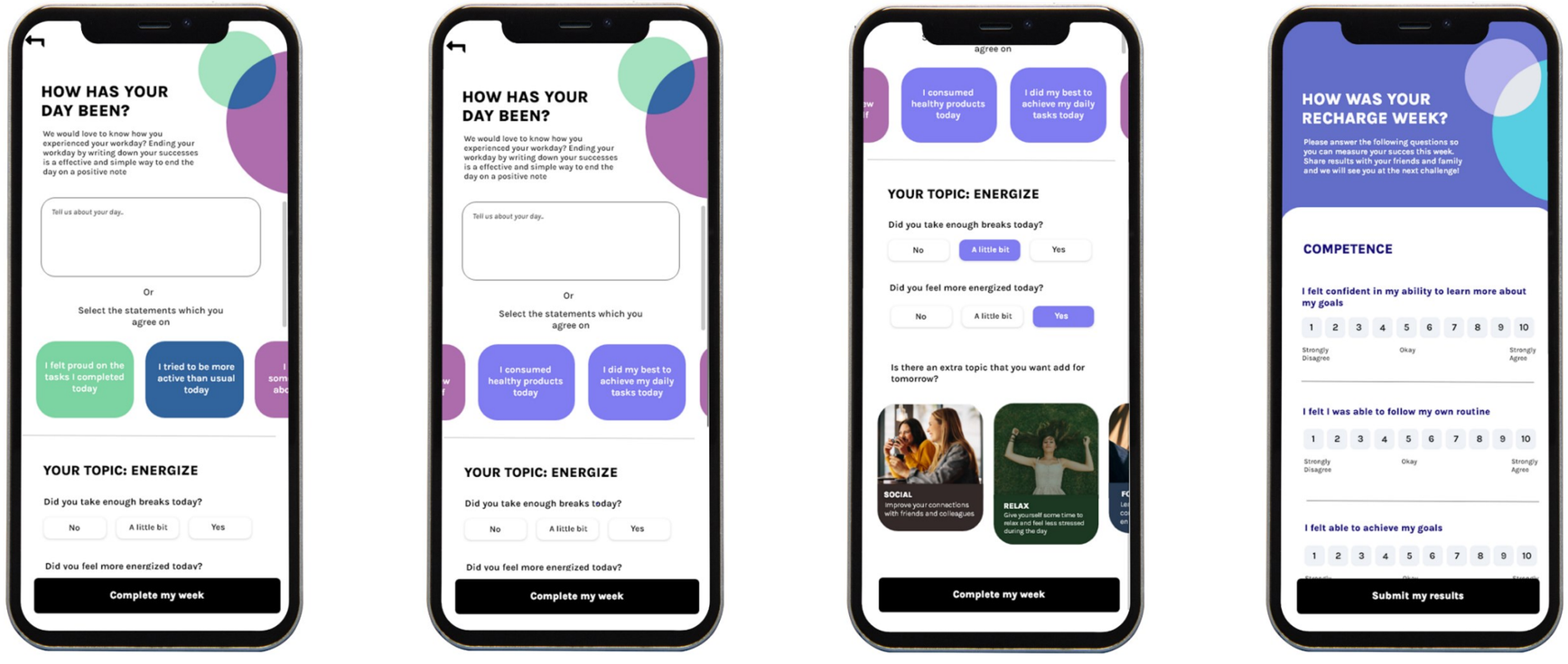


Figure 54: Reflection activity

4.9 User test

For the user test, 10 participants were asked to try out the concept design. These participants were current users of the Recharge app and were between 24 and 50 years old. Recharge found these participants by sending invitations to the user's mail. Because of limited resources and time Recharge could not find more participants to test the concept with. Furthermore, employees of the Recharge company were asked to try out the concept design as well. They could give feedback on if they liked it and if it would be feasible for the company. In total 6 Recharge users and 4 Recharge employees were chosen to test the concept.

The pilot test would take around 30 minutes and was set up online through zoom. The concept was made in Adobe XD and could be tested online by a unique link. During the user test, the participants were asked to share their screen and open the link so it was possible to see what the participants were doing (see figure 55). The user was asked to navigate through the concept app with the goal:

'Imagine starting and finishing your Recharge week by going through the app and choose at least two tasks that the app is providing''

After completing the tasks a survey was filled in for the concept app to measure its success. This was done immediately after the walkthrough of the app and the user was asked to stop sharing their screen.

Survey

To measure the success, the same survey was used in the pilot test which was based on the User engagement scale (UES) (O'Brien., 2018) and questionnaires related to the METUX model at the interface sphere (TENS-interface) (Peter et al., 2018). The survey questions can be found in appendix 3.

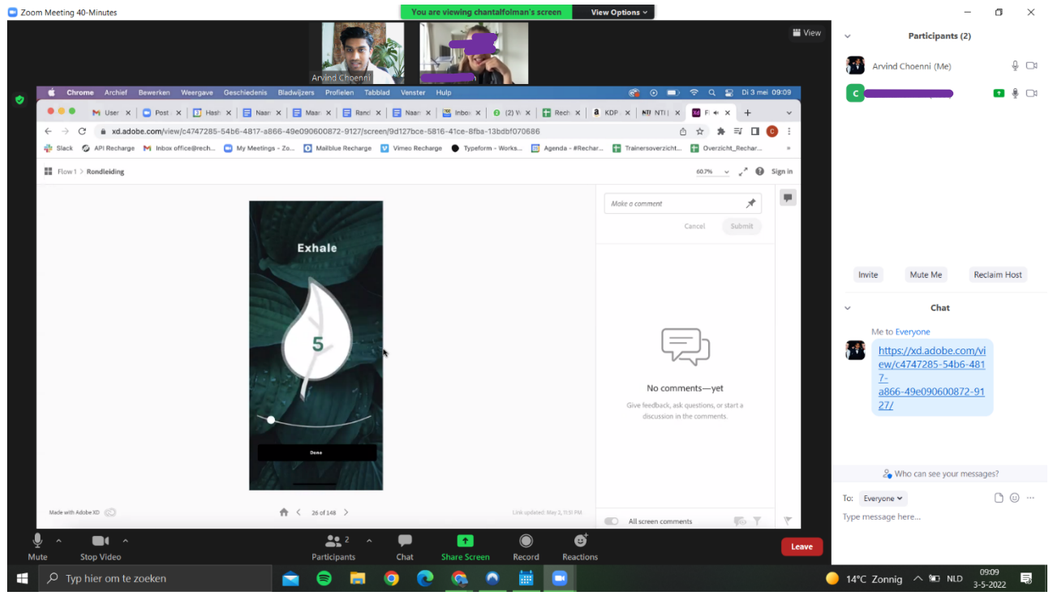


Figure 55: User test set-up

Concept app conclusions

Users were satisfied with the new concept app and the overall feedback was mostly about the details of the concept instead of the concept as a whole.

All participants were happy to see the choice freedom in the onboarding experience and found it helpful that they could pick a topic to focus on during the week. During the questionnaires, some users would like to have a more elaborated explanation of the statements. For example, what is meant with deep focus or what is considered fresh food? By adding an info button on every questionnaire screen a more elaborated explanation of the statements was presented and could solve this problem. In this way, the statements were still short and users could navigate more quickly through the onboarding. On top of that, Recharge employees wondered what would happen if people would select multiple goals in the app. The onboarding experience would get more questions and become too time-consuming. Therefore, it would be wise to recommend users simply to pick a maximum of 2 or 3 topics which still would be doable for the onboarding without losing interest. This could be tested in the future.

Furthermore, When users had to select their obstacles some would like to add their personal obstacle which was not mentioned in the options. In the goal section, it would not be possible to add another goal because the Recharge app has no program to offer in order to achieve that specific goal and therefore can not recommend tasks. However, adding a personal obstacle could be wise since it makes the user aware of their own obstacle and could later in the week reflect on it.

Adding a summary at the end of the onboarding experience was something I would like to add already, but due to prototype limitations, this became difficult to test. Users would like to see a brief summary, because most users forgot what they filled in later on. In the final recommendation a prototype of this screen is made and should be tested in the future.

When looking at the reflection activities Recharge employees recommended to add an extra reflection or rating at the end of every small task. In this way, the recommendation system would become more accurate (did the user like this activity and should we add more tasks like these in their checkbox?) and the company knows which tasks are most successful. When looking at the user's perspective they would be more interested to have a summary presented of their daily tasks and achievements. To reflect on those it would be helpful for users and Recharge if users would rate their top 3 tasks of the day Recharge gets information on the popular tasks and users can reflect on which tasks helped them out bests during the day. When the same tasks score high every day of the week users could potentially make a habit of them.

At last, the questionnaire could be more meaningful if in the end a comparison of before and after the week is given. The company and users liked the scientific background of the questions and recommended placing that somewhere in the text or through an info button to make users more aware of its value.

Furthermore, during this project the company focus shifted slightly between health and work efficiency. Recharge would like to see some questions back about work efficiency to target new customers. However, adding more questions would lead to a survey which was too time-consuming. Users said that they would not mind answering 20 questions if they finished the week and could later see a summary of the week's results. However, over 20 questions would be too much. Therefore, in the future, some questions should be changed and more topics, tasks and questions about work efficiency should be added.

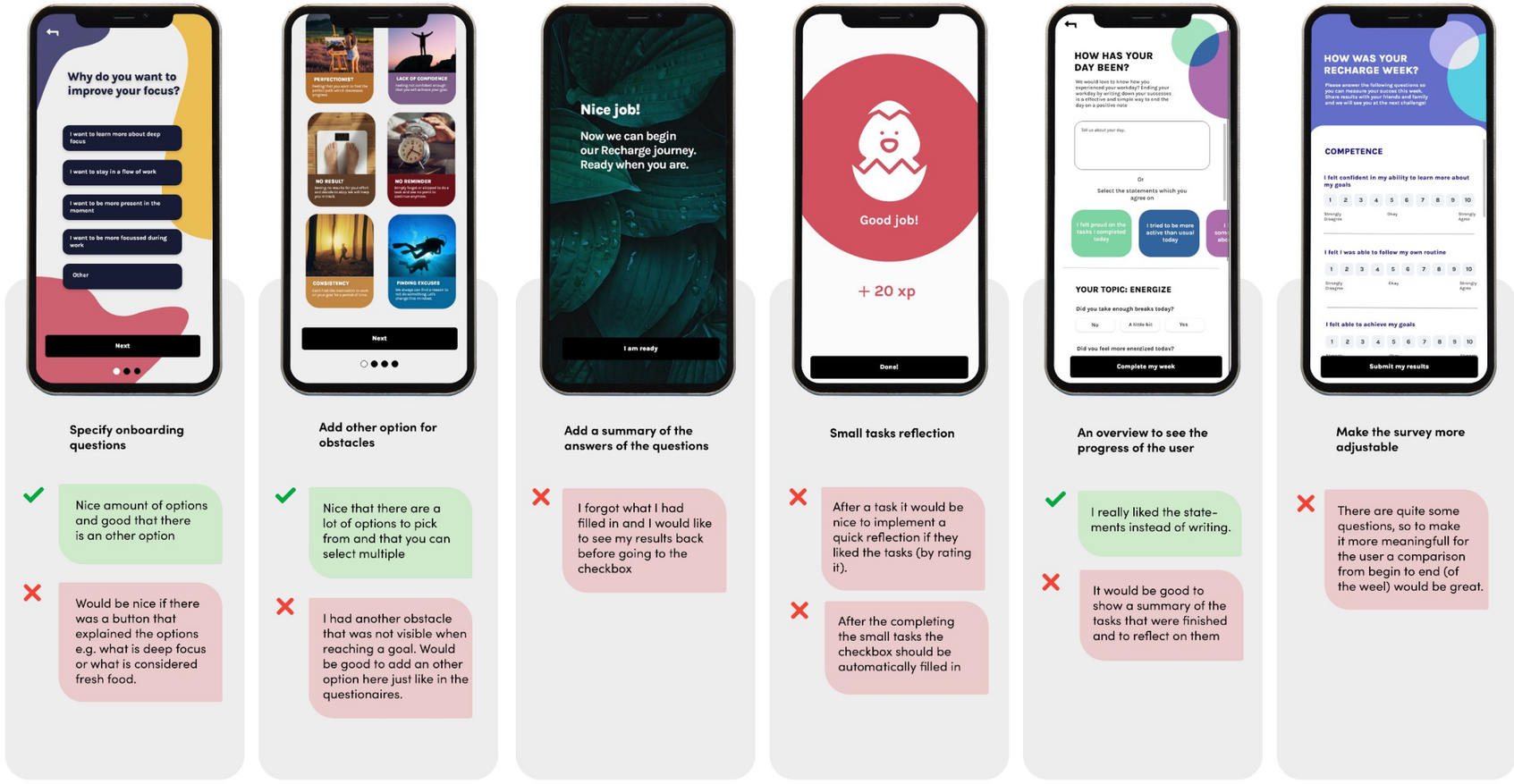


Figure 56: Concept conclusions

4.10 Survey results concept

After completing the user test, the users were asked to fill in a survey. The survey consisted of 13 questions which can be found in appendix 4. Each question was related to autonomy, competence or engagement. The most relevant ones are shortly described below.

Results autonomy

When looking at autonomy we see that users felt in control to follow their own routine and felt that the app was provided with useful options and choices. One person did not feel that the app provided useful options. This came as a surprise because after the survey a short interview was conducted with all participants where they could share their feedback. None of these participants mentioned a lack of choice freedom. Because the survey was filled in with screen sharing off and the answer sheets are anonymous (to make the user feel at ease when giving feedback and to stimulate them to give honest answers). It was not possible to see who it was. However, the majority still found the options and choices useful. To get more reliable results the app should be tested with more participants.

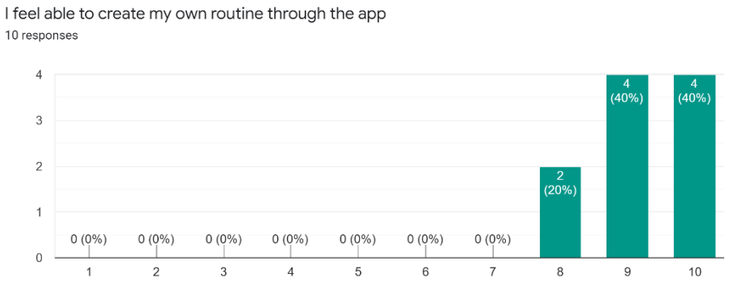
Results competence

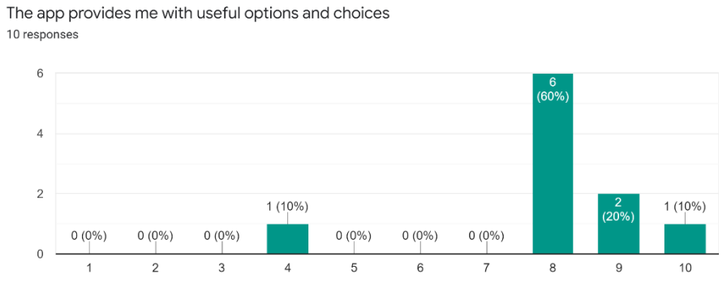
For competence, the users felt confident to learn from the concept app and felt they would be able to achieve their goals which was not quite different from the concept in the pilot test. To make users feel more confident more feedback features such as summaries and daily accomplishments were implemented in the final recommendations to make it easier for the user to see their progress and enhance competence.

Results engagement

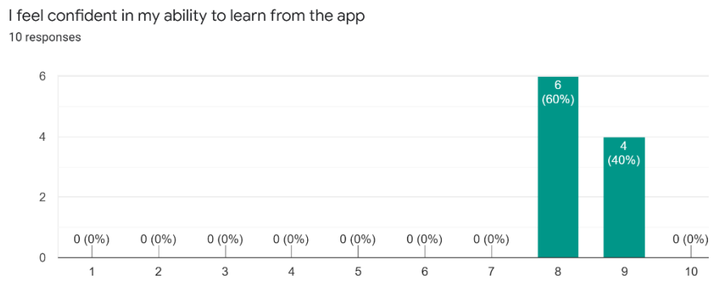
When looking at engagement we see the concept app scored again high on its aesthetic. However, when looking at the difficulty of doing tasks regularly it becomes interesting. In comparison to the pilot test, this topic scored lower and has the overall lowest score of all 13 questions. After the survey, the participants were briefly interviewed and explained why some scored it between 5 and 7. The reason for this is because most people (who finished a previous week) knew their struggle with the tasks when doing the week. They all liked the smaller tasks and agreed on the statement ''the tasks are easy to do''. However, they found it hard to imagine doing these tasks regularly and therefore placed their answers around the 6 simply because they were not sure and compared it to their previous week. To get a more reliable answer a new test should be conducted where participants should test these small tasks out for a week and see if they experienced them as difficult or not.

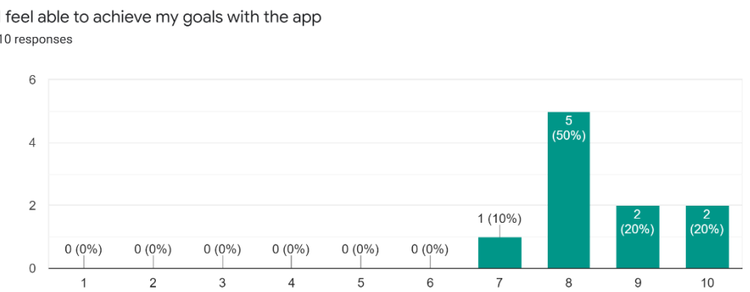
Survey results AUTONOMY



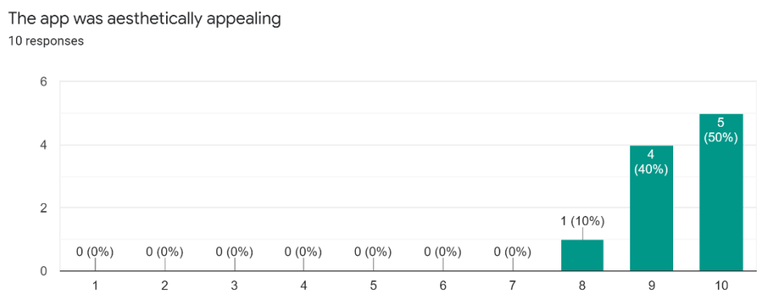


Survey results COMPETENCE





Survey results ENGAGEMENT



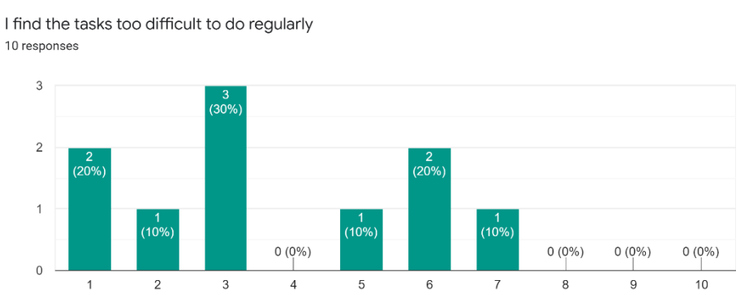


Figure 57: Concept survey results

Chapter conclusion

In this chapter, design ideas, user tests and concepts were created. Based on several iterations the Recharge app improved overall on its competence, autonomy and engagement level. When looking at the design direction and vision we saw users were satisfied with the amount of personalisation in the app, the smaller tasks and the daily reflection. Furthermore, users indicated that they felt more guided, confident and engaged during the app (see appendix 4, 5]).

Design direction

*''I want to design a more **personal** program that provides **meaningful interactions, relevant information** and **feedback to prioritize and guide** the user through the program.*

*Furthermore, the focus will be placed on **smaller tasks** that can easily be scheduled during work hours to **keep users energized or give space for reflection**''*

Design vision

*'Users should feel **guided and engaged** with the app in order to stick to the program and **feel at ease and confident** during the day''*

However, there are still some minor changes that can be made before presenting the final concept. After the user tests and iterations, we found that in general people would like to receive more feedback to see their progress or to get reminded of goals. Providing feedback can boost competence which is discussed in the app analysis on p.22. Furthermore, this is a topic which is addressed in the design direction as well and could be more present in the final concept.

In the next chapter, the final concept with its new implementations and recommendations was presented. Furthermore, a strategic roadmap was created which shows Recharge their next steps for the coming months and years. These steps consist of new app implementations, and what is needed to make it feasible.

05
DELIVER

In this chapter information can be found on

1. Finalizing & recommendations
2. Strategic Roadmap
3. Evaluation
4. Reflection

5. DELIVERING THE FINAL DESIGN

In this last chapter, the final adjustment were created and implemented in the app. The app prototype can be viewed online through the link (see chapter final concept). Furthermore, a last look at the engagement guidelines were given to make sure the relevant boxes were checked. On top of that, a strategic roadmap was formulated for future recommendations and to make sure the concept stays a iteratively development that continuously improves. At last, an evaluation and reflecting was given on the project success and limitations.

5.1 Final recommendations

In the previous chapter, we conducted several user tests and based on those some final recommendations were given by the Recharge employees and users. Some of these recommendations require minor adjustments such as specifying the onboarding options more in detail or adding an ''other'' option at the obstacle screen to enhance personalisation. When looking at figure 58 we see that on the right an info button is added. The info button gives a more detailed but brief summary of the statements in case people want to know more about it or if it might be unclear. The reason behind the info button is that we don't want to make the answers on the screen to elaborated while it takes in a lot of screen space and it slows down the onboarding experience. In figure 58 an ''other'' option is added on the obstacle screen where users are asked to fill in their personal obstacle when reaching for a goal which later can be seen in the onboarding summary and in the users profile in the future.

The onboarding summary is a new screen which is added at the end of the onboarding experience (see figure 58). In this way, the user is reminded of what they have selected and should confirm it for a final agreement. The summary consists of the user's topics choice, goals they want to achieve and common obstacles they experience. To make it more fun and engaging the layout is made like an official Recharge contract where the user should sign the contract and agree that they have filled it in intending to complete the week.

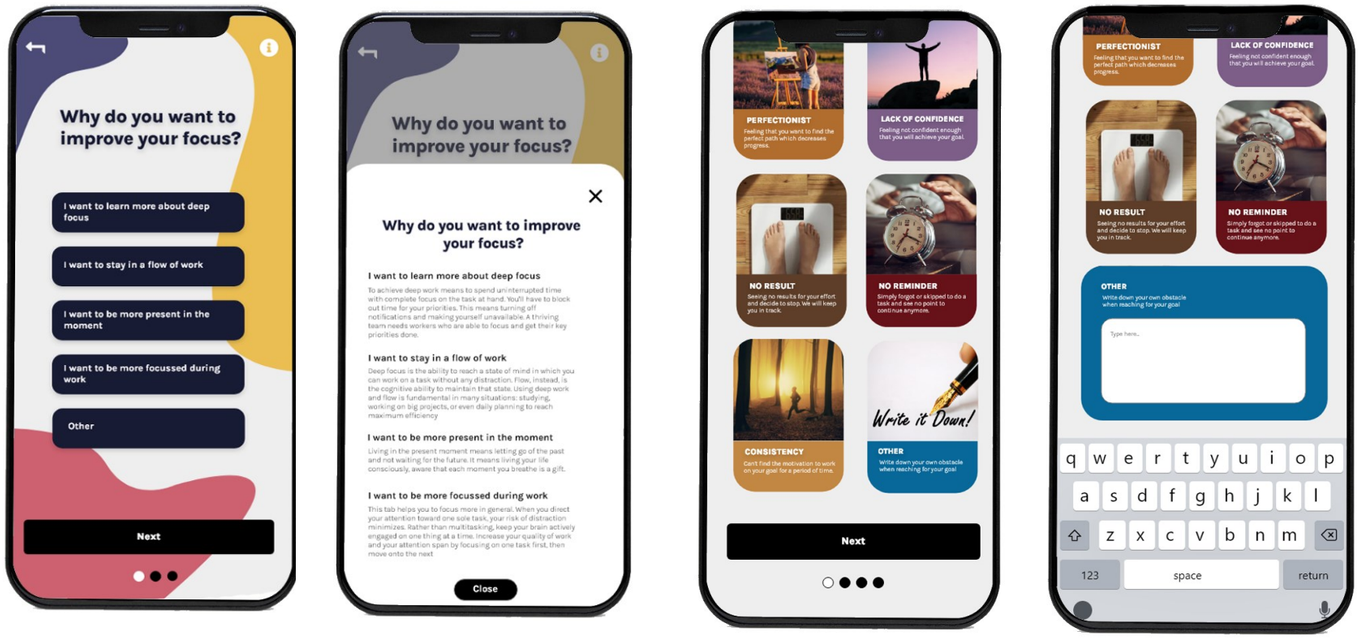


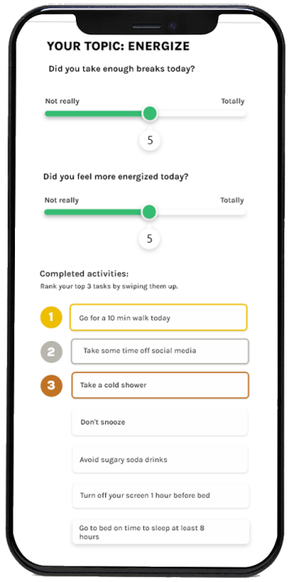
Figure 58: final changes concept

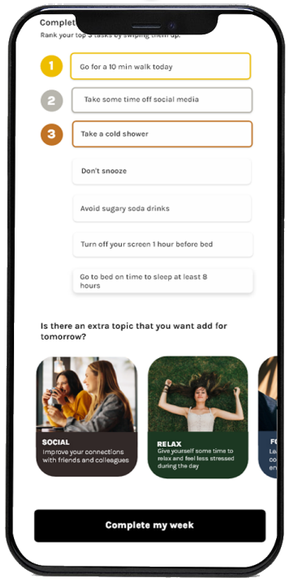
To improve the reflection moments and make them more valuable for the Recharge company and users some reflection tasks were added. Firstly, on every small task users are asked to give some quick feedback on the small tasks where they can rate their experience. This should be quick interaction that does not takes a lot of time for the user. With this rating, Recharge knows which tasks are most effective and which are not and after providing feedback the app would recommend more similar tasks to the user or not. In this way, it is both valuable for the user and Recharge.

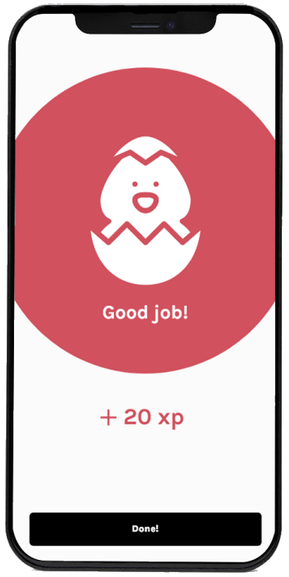
Secondly, after the daily reflection the user is asked to look back at their progress of the day and is asked to reflect on the tasks that felt most effective. This is a more focused reflection toward the user to think about the interaction with the tasks and how it impacted their day. Furthermore, It is interesting for Recharge to know which tasks are most successful and which are not and could use improvements.

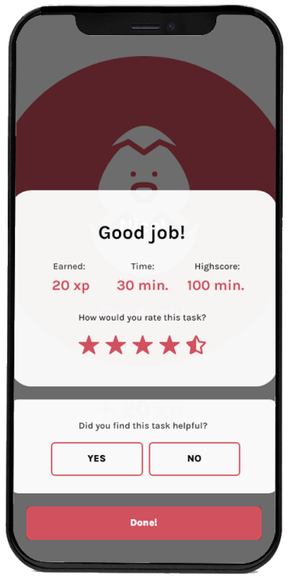
Thirdly, in the survey the user must reflect on their overall week. By adding a summary of their well-being level at the start of the week and the end of their week users can see how the program has impacted their week. With these changes, feedback and reflection features become more present in the app which aligns better with the design direction.

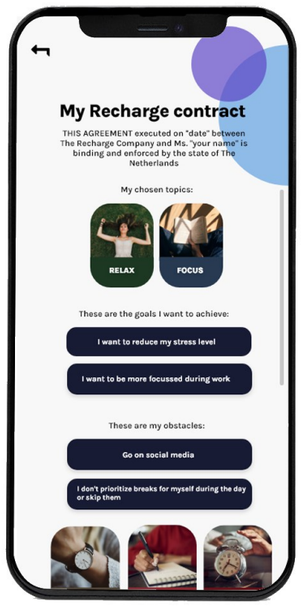
At last, other recommendations such as implementing streaks and fine tuning the recommendation system should be done in the future. The obstacle main screen should be adjusted based on the input that was given before. For example, if a user picks the topic energize and already specifies that they have a lack in energy, the obstacle main screen should adjust based on this choice. This means the option ''A lack of energy'' should be dismissed in the obstacle main screen so that the user does not have to select that they feel a lack of energy twice in the overall onboarding experience.











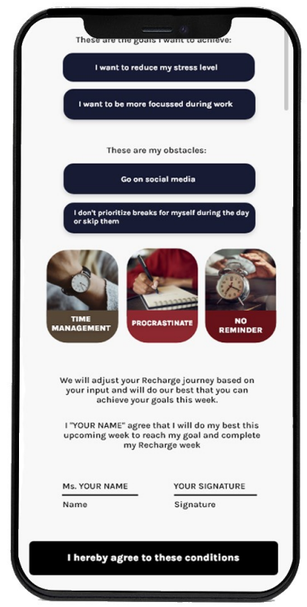
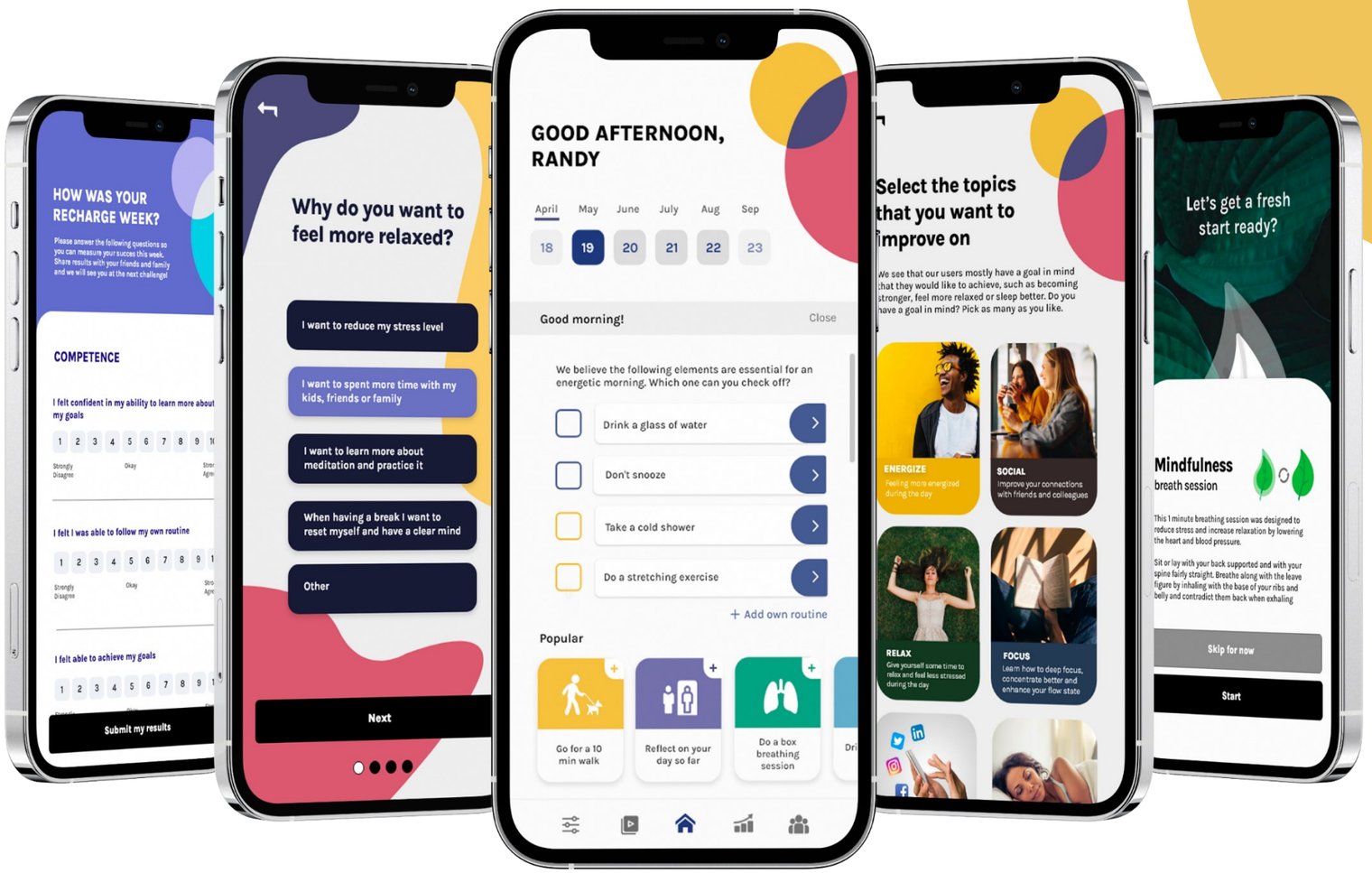


Figure 59: Small tasks summary

Figure 60: Reflection and onboarding summary

5.2 Final concept

The final concept for the Recharge app can be found in the link below:
https://xd.adobe.com/view/c9efdbb2-24fe-4bb0-ab60-de0b28b1752a-9cbc/



5.3 Engagement guidelines

When looking back at the engagement guidelines we see that the concept almost checked off every box of the list. Some items were easier to implement and got less attention compared to others.

When looking at interface aesthetics, the apps make now more use of visualisations rather than using a lot of plain text. Furthermore, more light and bright colours were used in order to be more appealing.

At the navigation level, the app already had a simple menu and the main menu layout did not change that much from its origin. However, more guidance was added to the whole app. Adding a search bar or menu was not added, simply because it was not necessary for the user tests. However, when this concept gets integrated into the whole app which consists of more tabs (settings, recipes, teamwork) a search menu bar would be recommended.

At the personalisation level, many changes were made. During the process when designing the concept items were actually automatically added when looking back at the guidelines and did not take extra work to implement. Overall, the app provides enough feedback, matches the user's characteristics and provides a clear assessment of the health status which gets monitored by reflecting exercises.

Communication, message presentation and credibility were already strong parts and did not need many changes. This project did not cover social interactions due to the time limitations of user tests and the priority of the app. It is recommended to boost relatedness in the app because users do feel a lack of community feelings and adding this can bring the app to the next level. As discussed before, more visualisation was used to communicate to the user which caused the message presentation to be kept short and effective.

New topics added ✓ –

Topics that were already added ✓

Interface aesthetic

- ☑ The screen shows a graphic presentation rather than too much information
- ☑ Pleasing color scheme with bright colors (eg, light green, white)
- ☑ Simple screen presentation that is not overcrowded
- ☑ Coherent scheme of colors, pictures, and themes throughout the intervention

Navigation

- ☑ Efficient access to the information provided, such as in a simple menu, and few buttons on the screen
- ☑ Guidance provided that explains how the app works
- ☐ Search bar or menu bar provided to accelerate the process of finding certain information

Personalization

- ☑ Assessment of the preferences and health status of the user
- ☑ Continuous monitoring of health and behaviour changes
- ☑ Provision of a diary or note-taking function
- ☑ Provision of personalized information matched to the user's characteristics
- ☑ Provision of feedback on the continuously monitored data
- ☑ Visual presentation of feedback, such as in graphs and tables
- ☑ Provision of autonomy to customize the app, for example, allowing the users to choose when they receive reminders or to set a goal about their future use of the app
- ☑ Provision of material incentives (eg, cash or gifts), intangible rewards (eg, rankings, and points), or messages of congratulations when a task is completed
- ☑ Sending of reminders to facilitate the scheduling of tasks and to ensure continuous use

Communication

- ☐ Provision of access to other people with similar experiences through an online forum, social community, or instant messages
- ☑ Provision of access to a health care provider through email, text message, or live chat

Message presentation

- ☑ Use of simple nontechnical language that can be readily understood
- ☑ Use of specific descriptions when providing actionable message
- ☑ Use of a positive and non-judgmental tone of voice
- ☑ Provision of multimedia messages, for example, text combined with relevant pictures or videos
- ☑ Presentation of information in the form of knowledge quizzes and games, if possible
- ☑ Use of various font styles, sizes, and colors to highlight information
- ☑ Editing of the text to make it as concise as possible

Credibility

- ☑ Provision of evidence-based information from credible sources
- ☑ Provision of a privacy policy that gives users the right to decide whether others can access their data and ensures the users remain anonymous when sharing their data with the health care providers or for research

5.4 Strategic Roadmap

Although the last recommendations are applied in the concept app, there is still room for improvement in the long run. To push Recharge in the right direction a strategic roadmap is created for the coming 2 years. This roadmap consists of the user's focus in the coming period, future features, feasibility (who is needed for these changes) and the METUX spheres (which sphere will it primary tackle).

In the first **coming weeks** the features such as the onboarding, smaller tasks and reflection activities can be tested on a higher scale or can be implemented in the next Recharge pulse to see what users think of it. By having a higher amount of participants, results become more reliable and new insights could be formulated. These changes are tackling the adoption, interface and task sphere which was the main focus of this project.

In the **coming 6 months**, changes should be implemented by the developers and more smaller tasks should be designed by the designer and content creator. In this stage, the onboarding can be implemented, but the recommendation system for the checkbox will probably not be ready yet. This is not a problem, since the onboarding can play as a reflecting role to provide a clear insight for the user. With this onboarding the user knows better where they want to work on or struggle with. With the new concept, more people complete the Recharge weeks which will lead to more people reaching the behaviour sphere (where a daily task becomes a habit).

In the **first year**, a recommendation system can be created when a new developer and designer is hired. With an effective recommendation system, the app can play into the individual wants and needs of the user. This increases user engagement and the Recharge goal (learning users how to diet, workout and manage mental health effectively) can be achieved by moving users to the life sphere.

At last, in **2 years** Recharge could expand and find a bigger target audience or businesses that want to interact with them. Furthermore, the recommendation system could predict users want and need on previous cycles because more data is available. When new users are found, a new METUX cycle starts for these target group (how will they adopt the product and interact with it?). This is optional for Recharge but could provide an opportunity to grow bigger.

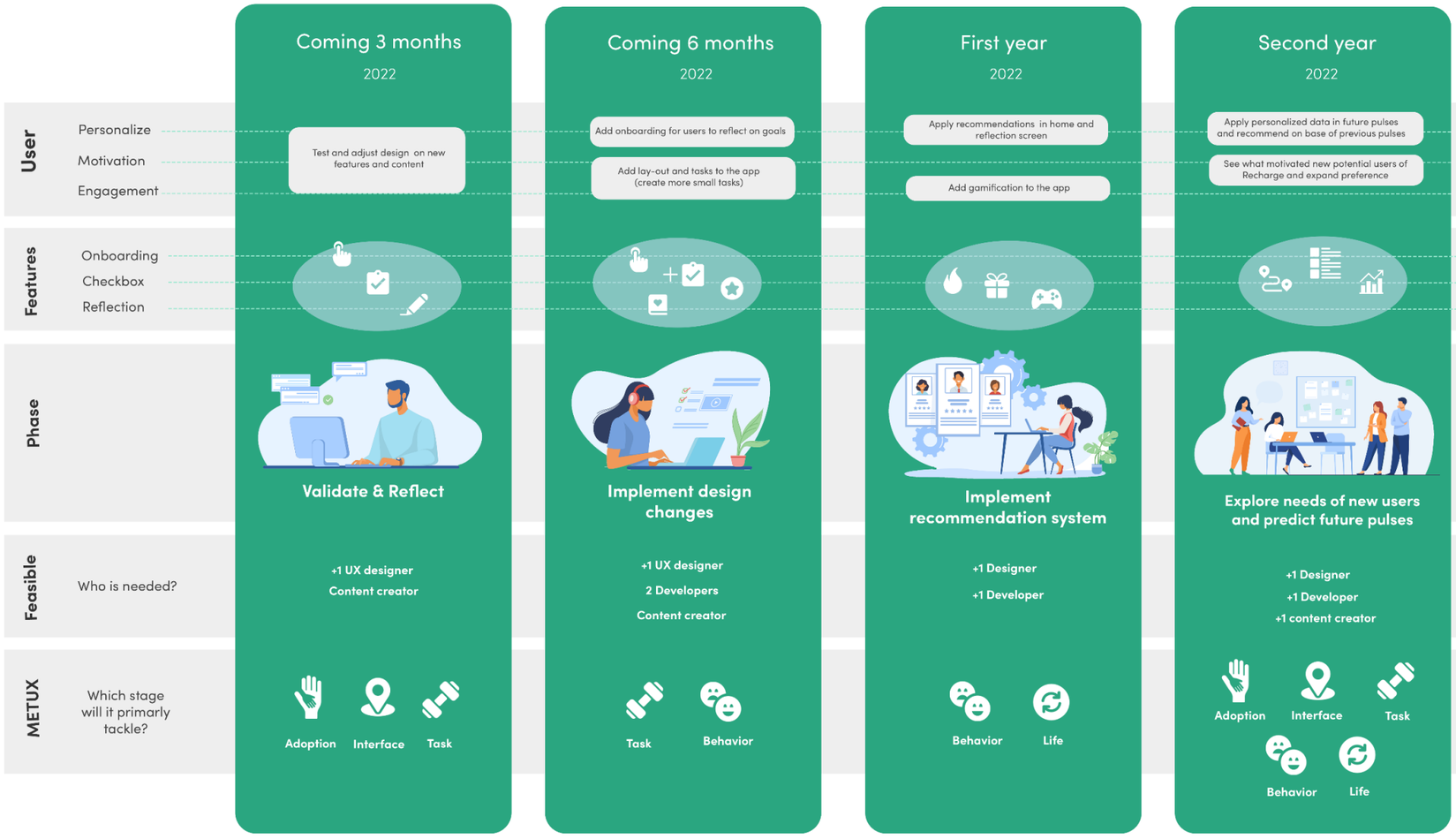


Figure 61: Strategic Roadmap Recharge

5.5 Evaluation

The Recharge Company

The project has successfully created a concept app for Recharge in order to improve people's well-being. The concept provides new features and structures that can engage and motivate more users to finish their week. The goal of the beginning of the project was:

"How to enhance motivation among Recharge users for them to go through with the program and create feelings of engagement with the app?"

To make the project feasible the focus was placed on only the app and the program of the app. By doing literature research, app analysis and conducting surveys/interviews we could define a clear overview of the topic, company and the problem. Based on those it was possible to formulate a correct design vision and direction.

With the vision and direction in mind, design ideas and concepts could be created which were continuously improved by doing user tests and feedback sessions. The new design of the app gives users a more personal and guided experience and provides more room for reflection which should stimulate the user to make use of a continuous feedback loop. Furthermore, adding more smaller tasks will help users who camp with time management issues. All these changes were made to make sure users felt engaged and confident enough to finish their Recharge week. By finishing these weeks people's mental and physical health improve and live a more carefree life.

Future recommendations can be found in the strategic roadmap and Recharge can still investigate many new areas, such as relatedness to spark engagement and motivate users to join Recharge. During the interviews, we tackled the 4 main problems of the users, but other design statements that rolled out of the interviews and study are still considered relevant. This project contributed for Recharge to show how design can play a role to motivate and engage its users and how to stay relevant in the upcoming months where the development of the app should be an ongoing iterative process.

Scientific literature

Besides providing a new concept for the Recharge app, this projects also helps future designers to show how design can play an important role in motivation and engagement. While there are many literature papers on motivation theories and engagement there are not many designs that make use of these theories in practice. Using the METUX model, SDT-theory and engagement guidelines in this project provided clear guidance on what was needed to improve my design.

By placing the project problem into the METUX sphere it was possible to see in which sphere the company was stuck in and what was needed to get out of that sphere and move to the next one. Using the METUX spheres in the design process can make it easier for the designer to see where users struggle with e.g. a problem of simply not knowing what Recharge does (adoption sphere) or navigating issues which make the app confusing (interface sphere). By setting pinpoints on every sphere it provides an overview for the designer to see where the design should be headed and what is needed to reach a certain sphere.

Furthermore, playing into the SDT needs and linking those to app features gave a clear insight into which need of the SDT was most lacking. By decomposing the app and clustering its core features into categories it provides clear insights into which categories or features contribute to motivation or engagement and which would hinder them. Furthermore, using the same method on other apps provides a clear overview of what other apps implement to make their app engaging or motivating. When comparing the Recharge app and its features to the other apps it also explained why users probably felt less motivated. At the end of the day, this kind of method is not bound to apps and could be done with other products or services as well. SDT-theory is an interesting theory for designers to reflect on where their designs stand to see if the 3 needs in a design are well enough balanced. Therefore, using literature papers on motivation and engagement can be a powerful tool to use as a guideline for designing new products or services.

Limitations

Although there was a lot of time available for this project, time was still too short to perform an extensive user test with the target audience. This was since Recharge is still a small team and it was difficult for them to reach participants that were willing to make time for user tests. Furthermore, due to legal reasons, it was not possible for me to directly contact Recharge users. Therefore, in the future user tests should be conducted with a larger target audience sample.

Furthermore, because of regulations of the corona pandemic it was only possible to interview users through zoom. This was not a big issue but because of this, users indicated that their workload increased a lot which lead that scheduling and conducting interviews took longer than expected. This caused the graduation time period to be extended when compared to the design brief.

At last, there were still some interesting areas to test on, for example if the small tasks were too difficult to do regularly or to test if users would use the app for a full week. Unfortunately, this would be time-consuming for the users and would be difficult to manage for the time period of the project. Eventually, it is difficult to measure engagement and behaviour change. In this project, people had to imagine using the app for a week instead of experiencing it for a week. It would be beneficial and doable for Recharge to find users in the future that want to test the concept for a week to gain new insights.

5.6 Reflection

From the beginning of the project I was enthusiastic about the project because the company really aligned with my own interest and I was familiar with the struggle of finding motivation in the field of improving my health. During this master project, I learned a lot about motivational and engagement principles and how to make effective use of them when designing. Because Recharge is a start-up company, I felt I really made an impact and I was happy to see that the company was enthusiastic about the project as well. This motivated me even more and I am happy to announce they offered me a job as their first designer where I can work further on this project.

When looking back at the project brief, I wrote down that I wanted to improve my skill in prototyping interfaces and UX design. In the beginning phase, I was quite sceptical, because most of the time it was literature study and conducting interviews. However, halfway through the project I learned a lot about prototyping interfaces and iterating the app was a fun and educational process for me. At the beginning of the prototyping phase, I needed more time to find out how to prototype certain things and what was possible. In the end, this went much quicker and I learned more about both Figma and Adobe XD.

The first half of the project was done during the covid pandemic. I found it very hard that I did not know many other people who graduated around that time period. The ones that did had to stop halfway due to covid related issues which demotivated me a bit. Furthermore, working on the faculty became unpractical due to travelling and not many people were present at the faculty around that time (working at home was recommended). However, in the other half, more people started coming to the TU and I worked more often at the faculty which gave me more structure for the project and gave me more motivation in general.

In the end, it did teach me to try my best to actively get in contact with others. I first taught that I would not be bothered working in my room for days. However, working outside and getting feedback on your project from fellow students helped me a lot to gain new insights and work more effective. When looking back at the project I can say I am happy with what I have accomplished and learned during this graduation project. I could not have done it without the support of my supervisory and company team.

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Appendix 1

1 Interview questions

HR MANAGERS/FOUNDERS
Goal

- Find out why The Recharge company is a good fit
- Find out what kind of assessment they use to measure wellbeing

Goedenmiddag,
Als eerst bedankt dat je tijd hebt kunnen vrijmaken voor dit gesprek. Mijn naam is Arvind Choenni en ik zou graag namens The Recharge Company een paar vragen willen stellen over je ervaring met de Recharge program om zo de samenwerking te verbeteren.

1. Zou je jezelf kort kunnen voorstellen, welk bedrijf je werk en wat jouw rol/taak is in het bedrijf?

2. Waarom heb je besloten om The Recharge program aan te schaffen? Waarom lijkt Recharge jou interessant?
Vervolg: Heb je het idee dat Recharge een positieve invloed heeft op het welzijn van uw werknemers? Waarom wel of niet?

3. Zou je kort willen beschrijven hoe een normale werkdag er voor jou uitziet?
Vervolg: Ga je vaak naar kantoor of werk je thuis?
Vervolg: Spreek/zie je je werknemers vaak of werken die thuis?
Vervolg: Wat is het hoogtepunt van je werkdag? Waarom?
Vervolg: Wat is een ander belangrijk moment van je werkdag?
Vervolg: Welk moment geeft de meeste impact op je gemoedstoestand werkdag?

4. Als we kijken naar een gezonde levenstijl of welzijn. Welke factoren vind jij dan dat daarbij passen? Waarom?
Of: Wat voor definitie zou u geven aan een gezonde levenstijl?
Vervolg: Hou jij je dan ook veel bezig met deze activiteiten/factoren gedurende dag?

5. Ben je bezig met het welzijn van je werknemers?
Vervolg: Zo ja met welke aspecten hoe je rekening mee?
Vervolg: hoe jou je dat bij (meet je dat)?

6. Wat versta je onder een goede levenstijl van je werknemers en hoe weet je of ze wel zijn?
Vervolg: Voer je hier bepaalde activiteiten voor uit of gebruikt u een bepaalde middel/tool om die data te verzamelen?
Vervolg: Als werknemers welzijn klachten hebben hoe melden ze dat dan en wat kan eraan gedaan worden?
Vervolg: Wat zijn veelvoorkomende klachten die je ziet op de werkvloer op gebied van welzijn?
Vervolg: Waar denk je dat deze klachten vandaan komen?
Next: Where do you think these complaints originate from?

7. Wat was je eerste indruk van de Recharge Company?

8. Wat is je ervaring tot nu toe met de Recharge Company?
Vervolg: Kwam dit overeen met je eerste indruk? Waarom wel of niet?
Vervolg: Gebruikt je de app zelf ook? Zo ja, wat is je ervaring met de app?
Vervolg: Heb jij enig idee hoe uw werknemers deze app ervaren?

9. Heb je eerder gebruik gemaakt van een health app of tool?
Vervolg: Wat is je ervaring hiermee? Werkte dit wel of niet en waarom?

10. Hoe denk jij dat wij ervoor kunnen zorgen dat meer mensen gebruik gaan maken van de app?
Vervolg: Wat denk je dat belangrijk is om toe te voegen (fysiek/sociaal aspect)?
Vervolg: Zou je het leuk vinden om zelf een actievere rol te spelen?
Vervolg: Nu we het wat meer hebben gehad. Wat zou nog meer een toegevoegde waarde kunnen zijn voor de Recharge app die je ook voor andere bedrijven zou aanraden?

Optioneel:

Zijn er strikte voorwaarden die moeten worden bereikt om aan te tonen dat jouw werknemers gezond zijn?
Vervolg: Zijn er mensen in of naast het bedrijf die deze voorwaarden controleert?
Vervolg: Als er voorwaarden/eisen zijn waar komen die vandaan? Wie stelt ze op?

//ENGLISH//

Good afternoon,
First of all, thank you for taking the time to have this conversation. My name is Arvind Choenni and on behalf of The Recharge Company I would like to ask a few questions about your experience with the Recharge platform in order to improve the cooperation between both companies.

1. Could you briefly introduce yourself and what your role/task is in the company?

2. Which factors do you think fit in a healthy lifestyle?
Or: What definition would you give to a healthy lifestyle?

3. When do you think that the well-being of your employees is in good state?

4. How do you know if your employees are in good health?
Next: Do you perform certain activities in order to know this or do you use certain resources/tools to collect this data?
Next: If employees have welfare complaints, how do they report it and what can be done about it?
Next: What are common complaints you see in the workplace regarding well-being?

5. Are there strict conditions that must be met to demonstrate that your employees are healthy?

6. What was your first impression of the Recharge Company?

7. What is your experience so far with the Recharge Company?
Next: Did it match your first impression? Why(not)?
Next: Do you use the app yourself? If so, what is your experience with the app?
Next: Do you have any idea how your employees experience this app?

8. Why did you decide to purchase The Recharge program?
Next: Do you feel that Recharge has a positive impact on the well-being of your employees? Why(not)?

9. Have you previously used a health app or tool to improve the wellbeing of your employees for Recharge?
Next: What was your experience with this? Did this work or not and why?

10. How would you like to play a more active role in The Recharge app with the aim of encouraging your employees to use the app more actively?
Next: Are there people in or outside the company that check these terms?
Next: If there are any conditions/requirements where do they come from? Who sets them up and how?

EMPLOYEES/USERS

Goal

- Find out what the problem is of users (what are the pitfalls that keep them from achieving their goals
- Find out what they want to achieve and how they think Recharge will play a role in order to achieve it (expectations)
- Find out what the Recharge app is lacking

Goedenmiddag,
Als eerst bedankt dat u tijd heeft kunnen vrijmaken voor dit gesprek. Mijn naam is Arvind Choenni en ik zou graag namens The Recharge Company een paar vragen willen stellen over uw ervaring met de Recharge platform met als doel om de app te verbeteren.

1. Zou je jezelf kort kunnen voorstellen, welk bedrijf je werkt en wat jouw rol/taak is in het bedrijf?

2. Waarom heb je besloten om The Recharge program uit te proberen? Hoe ben je daarbij gekomen?
Vervolg: Waarom heeft u de Recharge app gedownload?
Vervolg: Wat heeft het bedrijf gedaan om de werknemers naar Recharge te brengen

3. Zou je kort willen beschrijven hoe een normale werkdag er voor jou uitziet?
Vervolg: Werk je momenteel nog op kantoor of vanuit huis (of beide)?
Vervolg: Wat mis je het meest van op kantoor werken?
Vervolg: Wat zijn de voor jou de voordelen van thuis werken?
Vervolg: Als je even aan ontspanning toe bent tijdens je werkdag wat doen je dan meestal?
Vervolg: Hoe zie jij je rol tussen jij en je collega's?
Vervolg: Wat is het hoogtepunt van je werkdag? Wat maakt dat het hoogtepunt?
Vervolg: Waar kijk je het meest tegenop tijdens je werkdag? Waarom?

4. Als we kijken naar een gezonde levenstijl of welzijn. Welke factoren vind jij dan dat daarbij passen? Waarom?
Vervolg: Welke factoren vind je passen bij een gezonde levenstijl?
Of: Wat voor definitie zou u geven aan een gezonde levenstijl?

5. Vind je dat je op dit moment een gezonde levenstijl aanhoudt? Waarom?
Vervolg: Bent u tevreden over uw levenstijl?
Vervolg: Welke gezonde gewoontes/routines heeft u momenteel die bijdragen aan uw welzijn?
Vervolg: Welke gezonde gewoontes/routines had u vroeger die bijdroegen aan uw levenstijl?
- Waarom heeft u die niet meer?

Vervolg: Welke ongezonde gewoontes/routines heeft u momenteel waar uw niet trots op?
- Vervolg: Zou u dat willen verbeteren?
- Vervolg: Heeft u geprobeerd dat te verbeteren? Waarom lukt dat wel/niet?

6. Wat was je ervaring met de Recharge app?
Vervolg: Gebruikt u de Recharge app nog? Waarom wel/niet?
Vervolg: Hoeveel dagen heeft u gebruik gemaakt van de app?
Vervolg: Heeft u het idee gehad dat het programma een positieve bijdragen had aan uw welzijn?

7. Heb je gebruik gemaakt van andere health apps (denk aan hardloop, sport, mindfulness)?
Vervolg: Wat was uw ervaring met die apps?
Vervolg: Heeft u het idee gehad dat die apps een positieve bijdragen hadden aan uw welzijn?
Vervolg: in hoeverre maten denkt u dat een app invloed kan hebben op uw welzijn? Waarom?

8. Hoe denk jij dat wij ervoor kunnen zorgen dat meer mensen gebruik gaan maken van de app?
Vervolg: Wat denk je dat belangrijk is om toe te voegen (fysiek/sociaal aspect)?
Vervolg: Zou je het leuk vinden om zelf een actievere rol te spelen?
Vervolg: Nu we het wat meer hebben gehad. Wat zou nog meer een toegevoegde waarde kunnen zijn voor de Recharge app die je ook voor andere bedrijven zou aanraden?

Appendix 2: Survey 1

Survey link questions:
https://docs.google.com/forms/d/1isThO2MtpMQLRkInVLkbC9yoJrfvqcPkMzT61e0ya7k/edit

Figure 15: A bar chart which shows what the reasons are for users to maintain a motivational app. On the left the reasons are explained and on the right the bar shows how many participants agree to the statements.

A: I have the feeling I am reaching my goal
B: The app is challenging enough
C: The app is easy in use
D: The app offers enough new features/services
E: The app gives me positive feedback to improve myself
F: The reminds me to stay on track
G: I can clearly keep track on my performance throughout the app
H: There is a nice social aspect in the app
I: I like the social competition with others in the app
J: There is enough customization to make it work for me
K: There are many choices to pick from which gives me enough freedom
L: There are game elements in the app which makes it fun to use
M: The app gives enough information on the topics: The app provides rewards in some way which motivates me to use the app even more

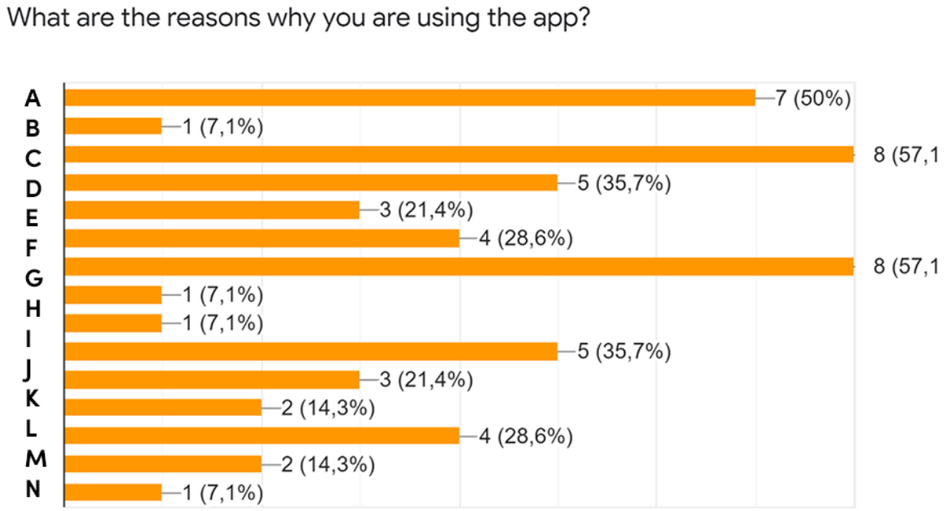
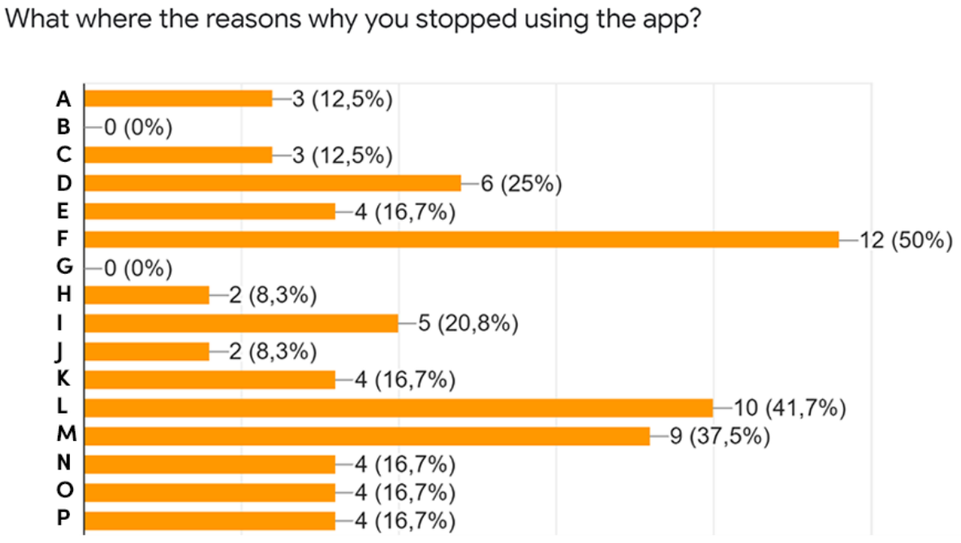


Figure 16: A bar chart which shows what the reasons are for users to discard a motivational app. On the left the reasons are explained and on the right the bar shows how many participants agree to the statements

A: I reached my goal
B: The app was not challenging enough
C: The app was too difficult
D: T The app was too repetitive
E: The app did not give enough feedback
F: I forgot to use the app
G: There were no clear track records on my performance
H: I found a better app
I: The interaction with the app was to complex/chaotic
J: I missed social connections in the app
K: I missed competition with others
L: There was not enough personalization
M: The choices in the app are limited
N: There are no game elements in the app which makes it a bit boring
O: The app did not give enough information on the topics
P: The app does not provide rewards which demotivates me to use the app as well



APPENDIX 3: Survey questions

User test1 - Recharge assessment

A brief assessment on the Recharge concept

1. I feel confident in my ability to learn from the app

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

2. I feel able to create my own routine through the app

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

3. I feel able to achieve my goals with the app

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

4. I find the tasks easy to do

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

02-05-2022 17:10 User test1 - Recharge assessment

5. I find the tasks too difficult to do regularly

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

6. The app provides me with useful options and choices

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

7. In the app I get the feeling I can do the things I want to

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

8. I felt guided when navigating through the app

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

9. The app was aesthetically appealing

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

10. Doing the task did not work out the way I planned

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

11. The experience was fun

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

12. I felt annoyed by the app

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

13. I felt in control during the experience

Mark only one oval.

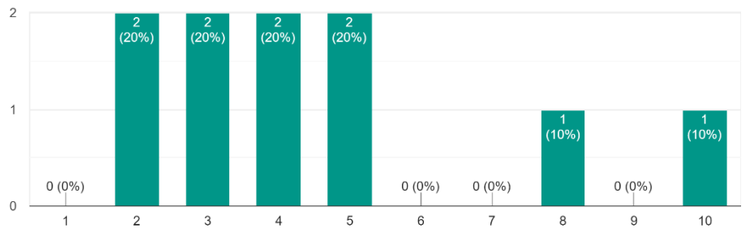
	1	2	3	4	5	6	7	8	9	10	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

14. Do you have extra feedback on the experience?

Appendix 4: Survey results

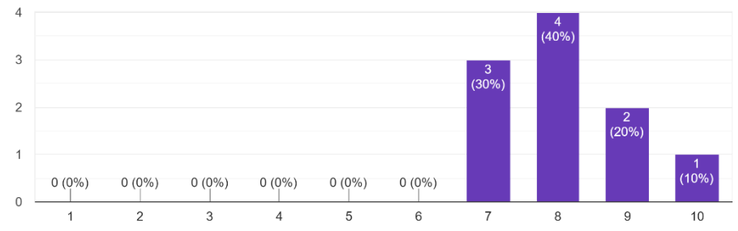
I feel confident in my ability to learn from the app

10 responses



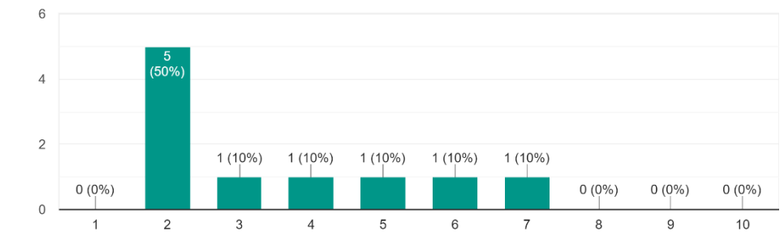
I feel confident in my ability to learn from the app

10 responses



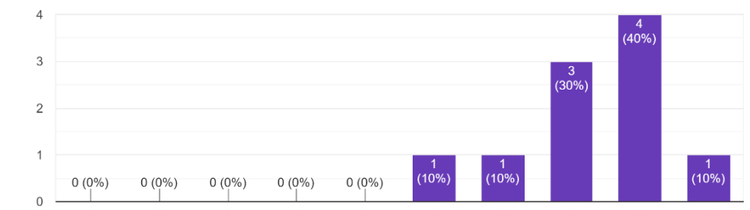
I feel able to create my own routine through the app

10 responses



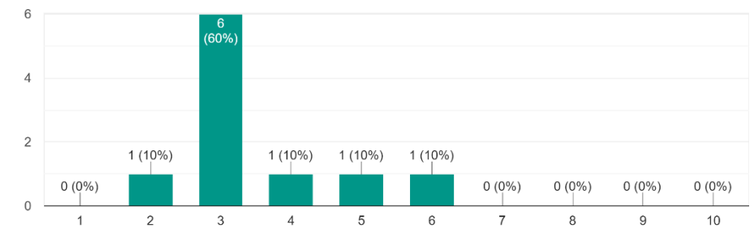
I feel able to create my own routine through the app

10 responses



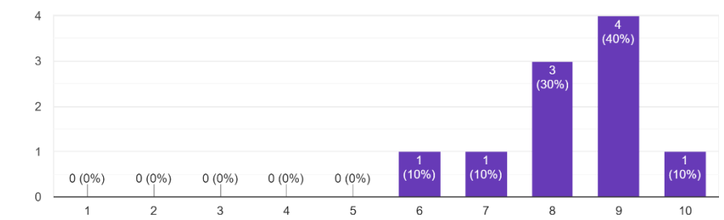
I feel able to achieve my goals with the app

10 responses



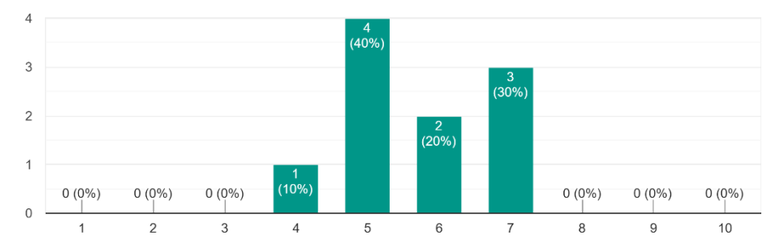
I feel able to achieve my goals with the app

10 responses



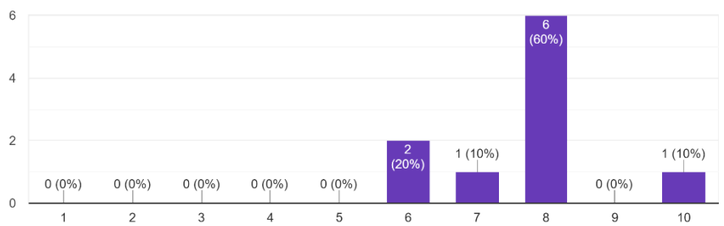
I find the tasks easy to do

10 responses



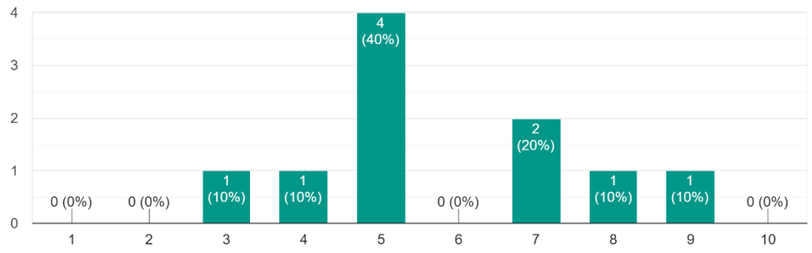
I find the tasks easy to do

10 responses



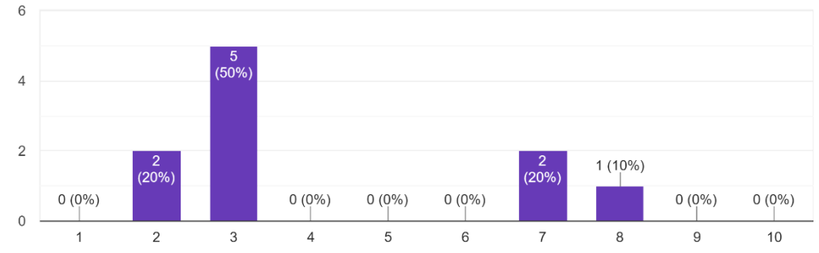
I find the tasks too difficult to do regularly

10 responses



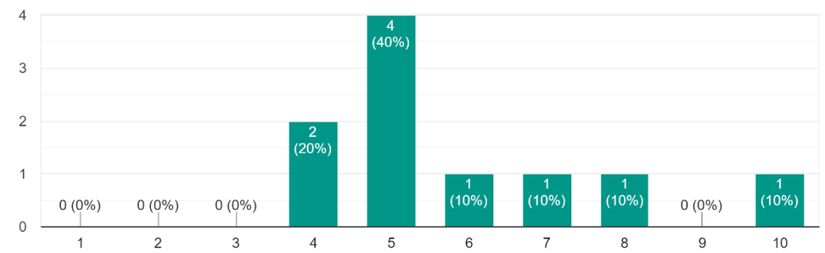
I find the tasks too difficult to do regularly

10 responses



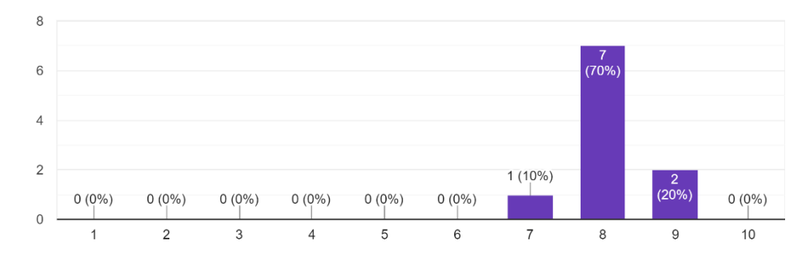
The app provides me with useful options and choices

10 responses



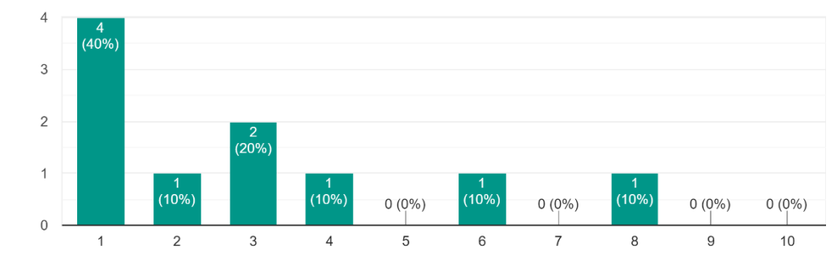
The app provides me with useful options and choices

10 responses



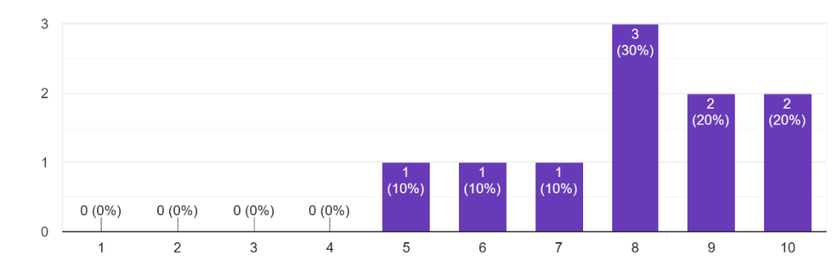
In the app I get the feeling I can do the things I want to

10 responses



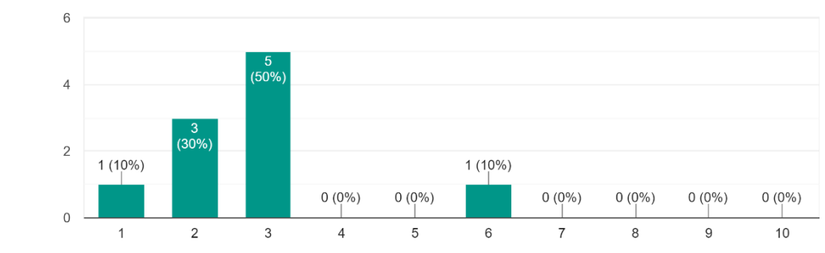
In the app I get the feeling I can do the things I want to

10 responses



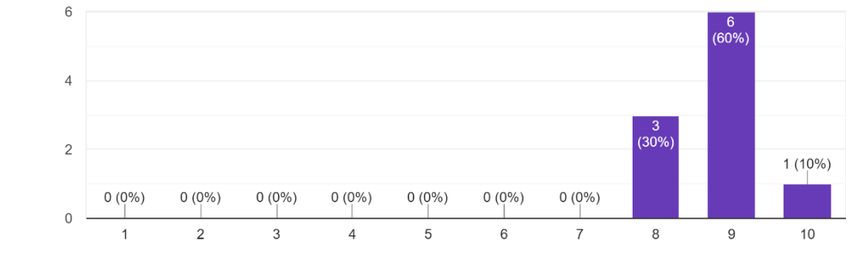
I felt guided when navigating through the app

10 responses



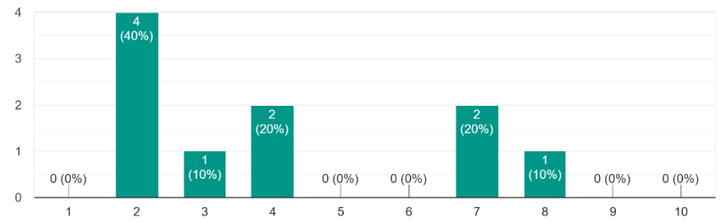
I felt guided when navigating through the app

10 responses



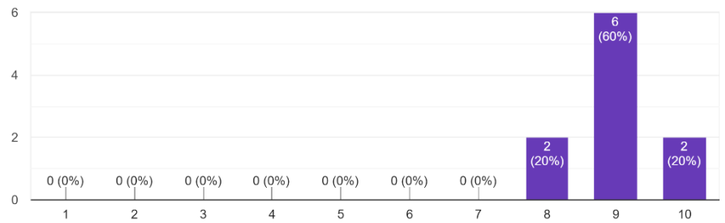
The app was aesthetically appealing

10 responses



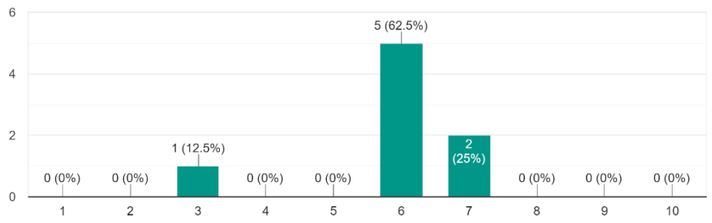
The app was aesthetically appealing

10 responses



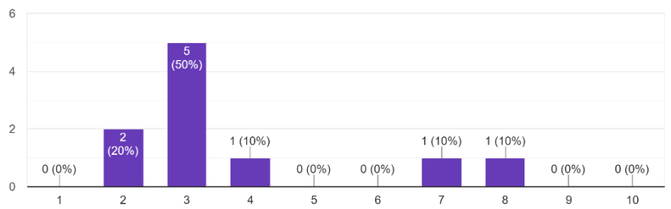
Doing the task did not work out the way I planned

8 responses



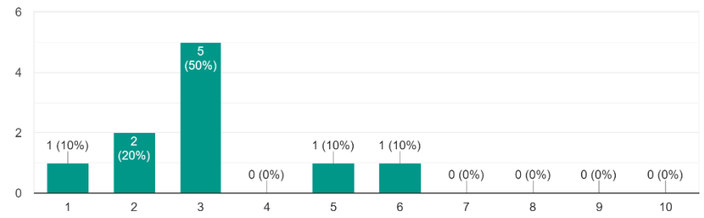
Doing the task did not work out the way I planned

10 responses



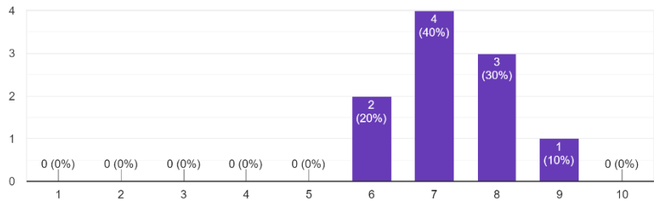
The experience was fun

10 responses



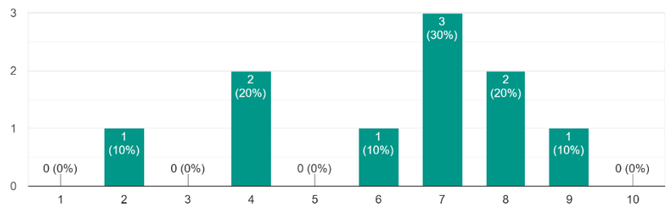
The experience was fun

10 responses



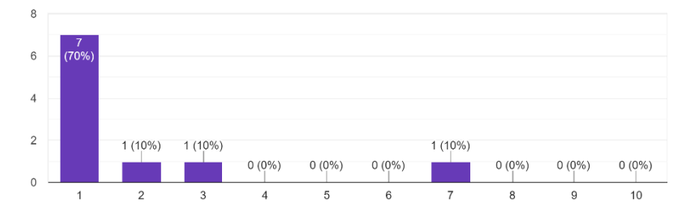
I felt annoyed by the app

10 responses



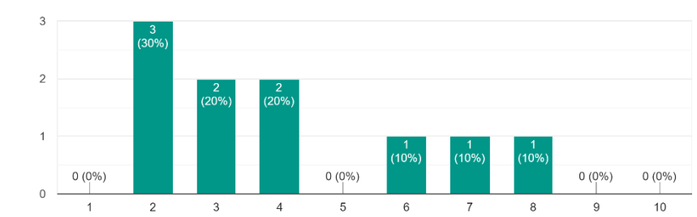
I felt annoyed by the app

10 responses



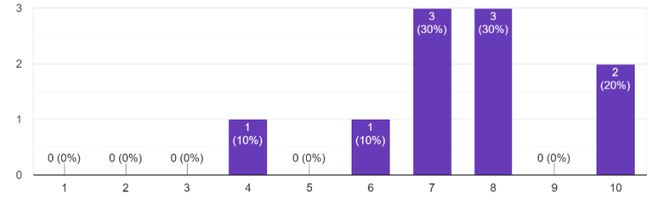
I felt in control during the experience

10 responses



I felt in control during the experience

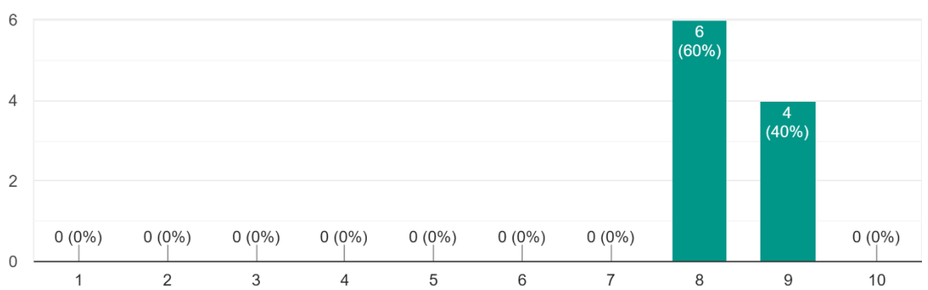
10 responses



Appendix 5: Survey results concept

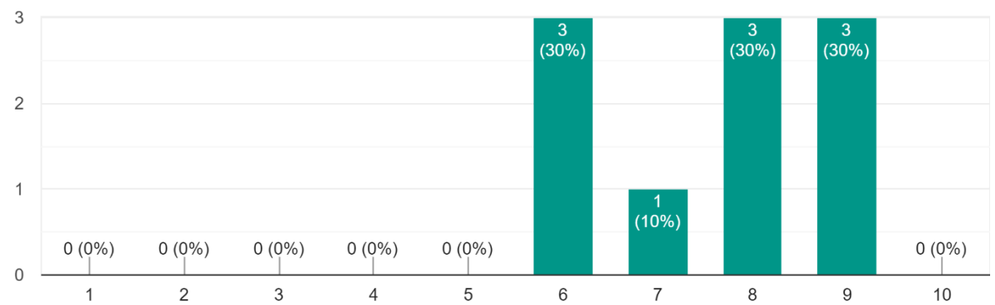
I feel confident in my ability to learn from the app

10 responses



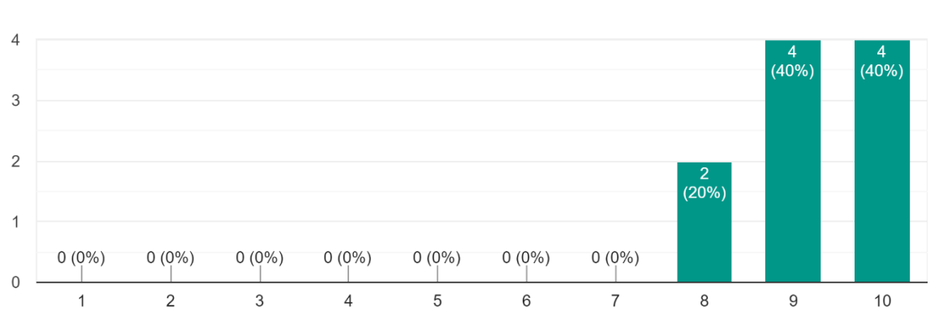
I find the tasks easy to do

10 responses



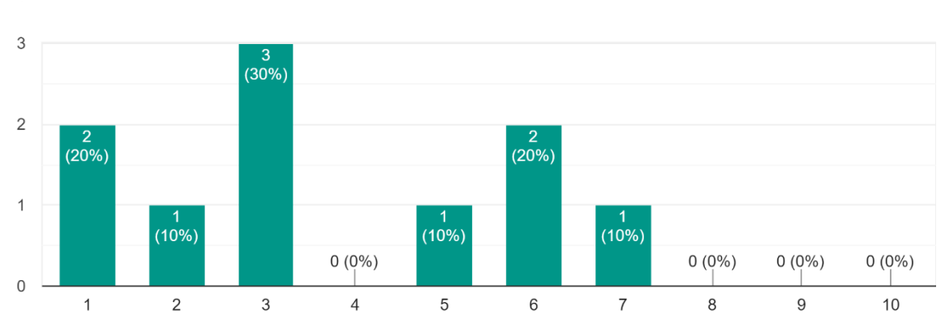
I feel able to create my own routine through the app

10 responses



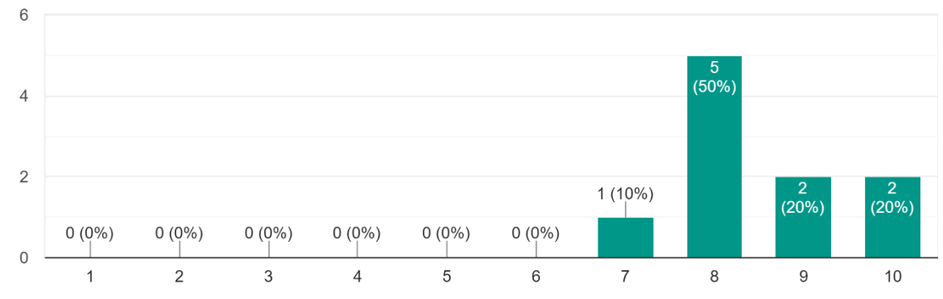
I find the tasks too difficult to do regularly

10 responses



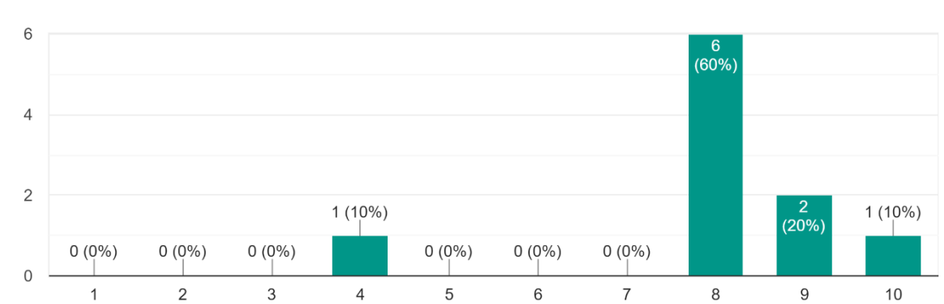
I feel able to achieve my goals with the app

10 responses



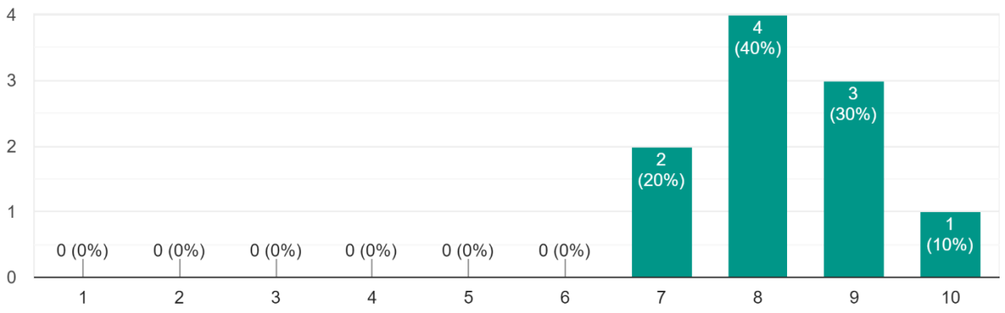
The app provides me with useful options and choices

10 responses



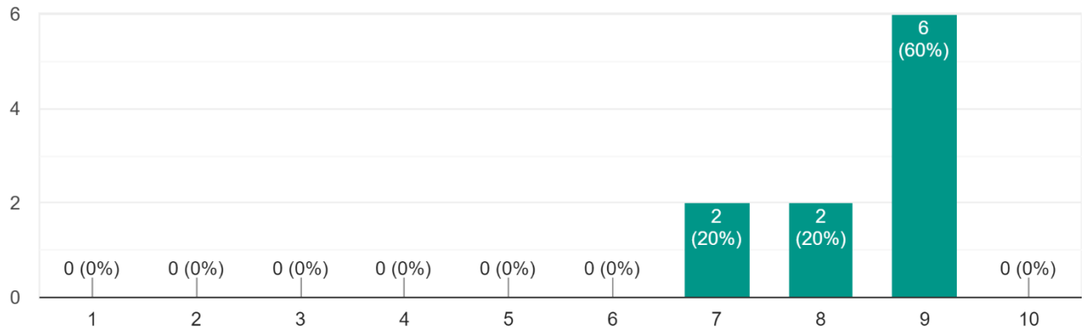
I felt guided when navigating through the app

10 responses



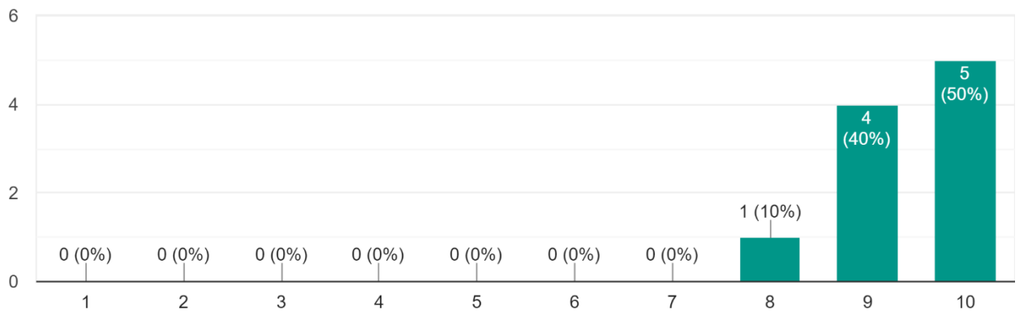
The experience was fun

10 responses



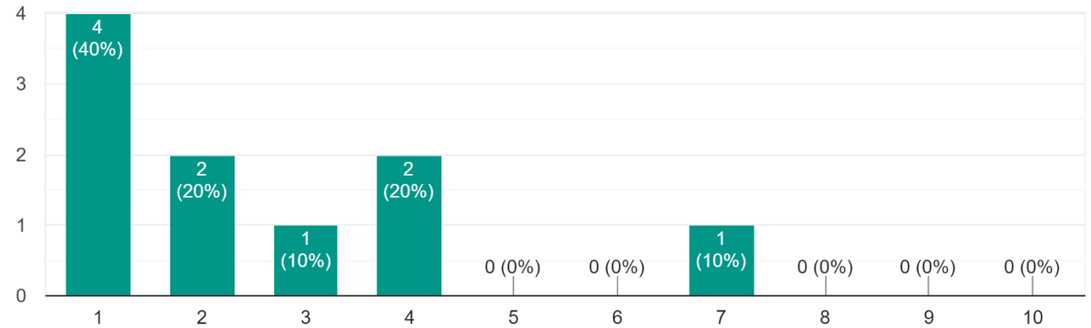
The app was aesthetically appealing

10 responses



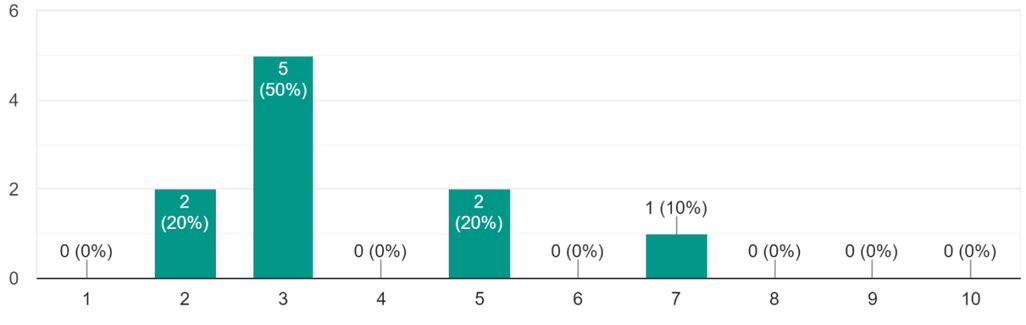
I felt annoyed by the app

10 responses



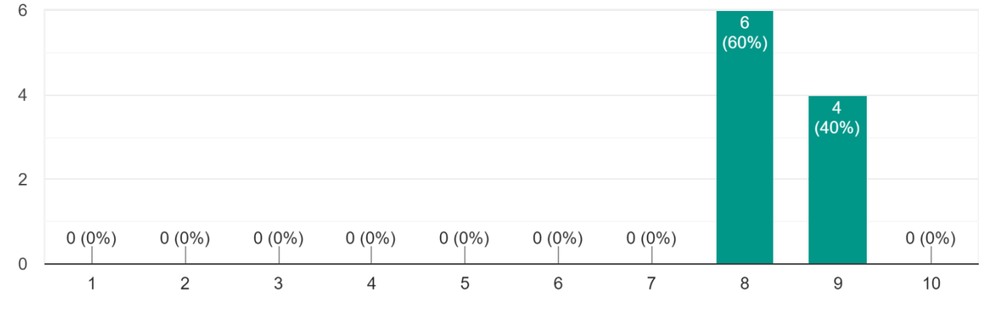
Doing the task did not work out the way I planned

10 responses



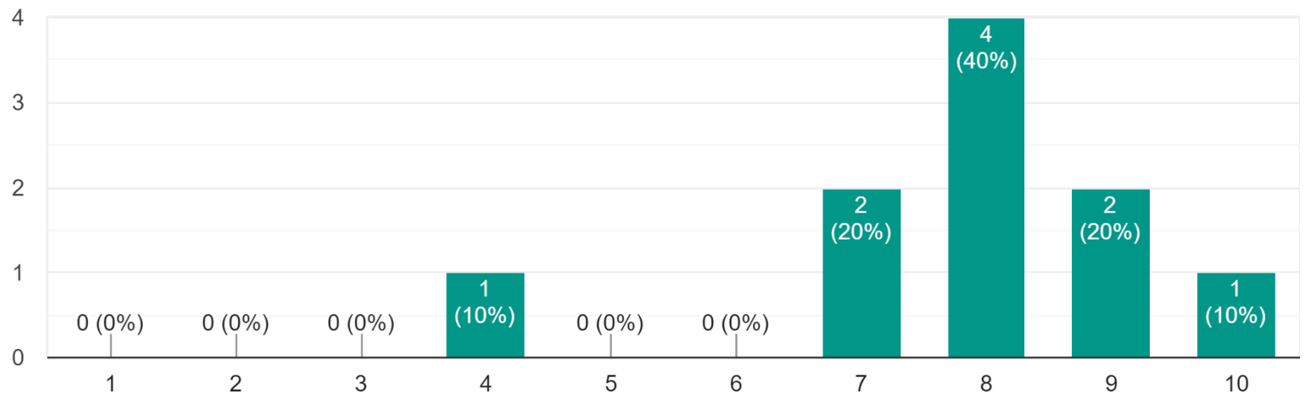
In the app I get the feeling I can do the things I want to

10 responses



I felt in control during the experience

10 responses



Appendix 6: Reflection statements

I felt proud on the tasks I completed today

I tried to be more active than usual today

I learned something new about myself

I consumed healthy products today

I did my best to achieve my daily tasks today

I felt I came closer to achieving my goal

I gave myself time to focus on my health today

I did not give in to my bad habits today

I stepped out of my comfort zone today

I felt more present in the moment than usual

Appendix 7: Survey questions

Questionnaires related to the interface sphere (TENS- interface)

Competence

1. I feel confident in my ability to learn from the app
2. I am able to follow my own routine through the app
3. I feel able to achieve my goals with the app
4. I find the tasks easy to do
5. I find the tasks too difficult to do regularly (-)\

Autonomy

1. I feel pressured to do the tasks (-)
2. I feel guilty when I don't do the task (-)
3. The app provides me with useful options and choices
4. In the app I get the feeling I can do the things I want to
5. I felt guided when navigating through the app.

Engagement

1. The app was aesthetically appealing.
2. I consider my experience a success.
3. During this experience I let myself go.
4. The experience was fun.
5. I felt annoyed while reaching my goal.

Relatedness

1. Doing the task helps me to feel part of a larger community.
2. Doing the task helps me to form or sustain relationships that are fulfilling

Overall

1. How happy are you now with your current energy level?
2. How happy are you now with your current well-being level?
3. Do you want to share any feedback with us?